

SECTION 4.0

ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

In this section, environmental consequences are described for the alternatives described in **Section 2.0**. Resource areas that are analyzed in this section include:

Section	Resource Area/Issue
4.2	Geology and Soils
4.3	Water Resources
4.4	Air Quality
4.5	Biological Resources
4.6	Cultural and Paleontological Resources
4.7	Socioeconomic Conditions
4.8	Transportation/Circulation
4.9	Land Use
4.10	Public Services
4.11	Noise
4.12	Hazardous Materials
4.13	Aesthetics
4.14	Indirect and Growth-Inducing Effects
4.15	Cumulative Effects

Direct impacts are those that are caused by the action and occur at the same time and place, while indirect impacts are caused by the action and occur later in time or further in distance, but are still reasonably foreseeable (Council on Environmental Quality [CEQ], Regulation 1508.8). Indirect and growth-inducing effects of the Alternatives to each resource area are assessed in **Section 4.14**, and cumulative effects are assessed in **Section 4.15**. Note that, consistent with the CEQ's National Environmental Policy Act (NEPA) Regulations Section 1508.8, the term "effects" is used synonymously with the term "impacts."

4.2 GEOLOGY AND SOILS

This section identifies and analyzes the direct effects associated with geology and soils that would result from the development of each alternative (described in **Section 2.0**) to determine if construction or operation would result in direct adverse impacts to the proposed site topography, soils, or mineral resources, or if geological hazards associated with the existing setting would pose limitations to the development of each alternative. Effects are measured against the environmental baseline presented in **Section 3.2**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for adverse effects identified in this section are presented in **Section 5.2**.

ASSESSMENT CRITERIA

Each alternative is analyzed to determine if construction or operation would result in direct significant impacts to the proposed site topography, soils, or mineral resources; or if geological hazards associated with the existing setting would pose limitations to the development of each alternative.

4.2.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

Site Topography

As discussed in the preliminary Grading and Drainage Plan for Alternative A, included as **Appendix C**, no import or export of fill material will be required for Alternative A as it has been designed to be a balanced earthwork operation. Construction of Alternative A would require approximately 94,000 cubic yards of both cut and fill. Of the 94,000 cubic yards of cut, 65,000 cubic feet will be cut to create an infiltration/wet pond. Topographic features of the development area would be altered by earthwork. However, some project features, such as the access road, have been designed to match the existing grade in order to minimize earthwork.

The Strawberry Fields Site is flat and does not contain any distinctive topographical features. On-site grading would facilitate proper drainage. Development of Alternative A, given the proposed design (**Section 2.3.2**) and existing flat topography, would result in a minimal impact on topography. Therefore, no adverse effect to topography on the Strawberry Fields Site would occur under Alternative A and no mitigation is required.

Soils and Geology

Alternative A could temporarily adversely affect soils due to erosion during construction from activities such as clearing, grading, trenching, and backfilling. The soils on the Strawberry Fields Site have a slight erosion potential based on soil type and slope gradient (refer to **Table 3.2-1** in **Section 3.2.2**).

Sediment and erosion discharge into navigable (surface) Waters of the U.S. is prohibited by the federal Clean Water Act (CWA) (1972, with modifications in 1977, 1981, and 1987), which establishes water quality goals for sediment control and erosion prevention. One of the mechanisms for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES) permitting program, administered by the United States Environmental Protection Agency (USEPA). Construction of Alternative A would comply with the NPDES General Construction Permit (refer to **Section 2.3.2**), which requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must make provisions for erosion prevention and sediment control and control of other potential pollutants.

The soils within the Strawberry Fields Site, as described in **Section 3.2.2**, are characterized as being moderately to highly corrosive to steel, and are also characterized as being moderately corrosive to concrete (NRCS, 2017). In anticipation of these soil limitations, Best Management Practices (BMPs) in **Section 5.2** include protective measures to minimize adverse impacts relative to soil corrosivity. With incorporation of these BMPs, impacts resulting from corrosive soils will be less than significant.

Seismicity

As discussed in **Section 3.2.2**, the nearest fault line is the Battle Creek Fault, approximately 11 miles south of the Strawberry Fields Site. As discussed in **Section 2.3**, the casino and related facilities under Alternative A would be constructed to standards consistent with the International Building Code (IBC) guidelines, particularly those pertaining to earthquake design, in order to safeguard against major structural failures and loss of life. With incorporation of these standards, development of Alternative A would have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

The Strawberry Fields Site is located within 100 miles of Lassen Peak, Mount Shasta, and Medicine Lake Volcano, all of which have been inactive in the last few decades (**Section 3.2.2**). Should the volcanos erupt again, deposits of ash, lava flows, domes, and pyroclastic flows could endanger infrastructure within the vicinity of the volcano, including the Strawberry Fields Site. Although volcanic eruptions are difficult to predict, geologic history of the Lassen area indicates that eruptions have an average recurrence intervals of about 10,000 years. Therefore, due to the most recent eruption events in 1914 through 1917, Lassen Peak is not expected to erupt in the foreseeable future (NPS, 2015).

Additionally, it is expected that if Mt. Shasta were to erupt, the eruption would be preceded by a series of earthquakes over weeks or months, allowing for evacuation of nearby potentially impacted locations. Mount Shasta's most recent eruption was 200 to 300 years ago, and on average Mount Shasta is expected to erupt every 600 to 800 years (USGS, 2014). Therefore, it is not expected to erupt for another 300 to 1,000 years.

Based on the pattern of Medicine Lake eruptions over the past 13,000 years suggest that the chance for a future eruption is approximately 1 in 3,600 in any given year. Heightened earthquake activity and ground deformation in the area will precede the next eruption, which is most likely to be effusive (USGS, 2014).

Due to the large timescale of these potential volcanic events, this is not considered a reasonably foreseeable event. Furthermore, should any volcanic activity threaten the planning area the surrounding cities has addressed evacuation procedures, such as the City of Mt. Shasta in its Emergency Plan. Therefore, Alternative A would have a less-than-significant impact with respect to volcanic hazards and no mitigation would be required.

Mineral Resources

Given there are no known or recorded mineral resources within the Strawberry Fields Site, construction and operation of Alternative A would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative A and no mitigation is required.

Off-site Access Improvements

Site Access Option 1 includes the construction of the North Access Improvement Area, located along Bechelli Lane north of the Strawberry Fields Site. Site Access Option 2 includes the construction of both the North Access Improvement Area and South Access Improvement Areas, which runs an existing private driveway to the south. Effects associated with geology and soils from development of off-site access improvements are described below.

Site Topography

The North and South Access Improvement Areas are both gently sloped and do not contain any distinctive topographical features. The profile of the access roads has been designed to match the existing grade, therefore earthwork along Bechelli Lane and the existing rural driveway will be minimized and facilitate proper drainage (**Appendix C**). Accordingly, given the proposed design, no adverse effect to topography during development of Site Access Option 1 or 2 would occur under Alternative A and no mitigation is required.

Soils and Geology

The proposed off-site access improvements could temporarily adversely affect soils due to erosion during construction from activities such as clearing, grading, trenching, and backfilling. The soils on the North and South Access Improvement Areas have a slight to moderate erosion potential based on soil type and slope gradient (**Section 3.2.2**). This is a potentially significant impact. BMPs have been included in **Section 5.2** to prevent erosion and sedimentation to surface waters during construction. With incorporation of these BMPs, effects from construction of Access Options 1 and 2 under Alternative A would be less than significant.

Similar to the Strawberry Fields Site, project construction would comply with the NPDES General Construction Permit, under which a SWPPP would be implemented in order to prevent erosion and control sediment pollution (**Section 2.3.2**). Additionally, the soils within the North and South Access Improvement Areas, as described in **Section 3.2.2**, are characterized as moderately to highly corrosive to steel, as well as characterized as being moderately corrosive to concrete (NRCS, 2017). In anticipation of these soil limitations, project design will incorporate protective measures included as BMPs in **Section 5.2** to minimize adverse impacts relative to soil corrosivity. With incorporation of these BMPs, impacts resulting from corrosive soils will be less than significant.

Seismicity

As discussed in **Section 3.2.2**, the nearest fault line is the Battle Creek Fault, approximately 11 miles south of the North and South Access Improvement Areas. However, as discussed above, Site Access Option 1 and 2 would be constructed to standards consistent with the IBC guidelines. Development of Site Access Option 1 and 2 under Alternative A would have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

As discussed in **Section 3.2.2**, the North and South Access Improvement Areas are located within 100 miles of Lassen Peak, Mount Shasta, and Medicine Lake Volcano. However, as discussed above, volcanic eruptions are not considered a reasonably foreseeable impact to Site Access Option 1 or 2. Therefore, Site Access Options 1 and 2 under Alternative A would have a less-than-significant impact with respect to volcanic activity and no mitigation would be required.

Mineral Resources

Similar to the Strawberry Fields Site, the North and South Access Improvement Areas contains no known or recorded mineral resources, therefore, no adverse impacts to mineral resources would occur under Site Access Options 1 and 2. No mitigation is required.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal governmental and housing uses. Because no exterior improvements or construction activities would occur, no impacts to geology and soils would occur.

4.2.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE Development at the Strawberry Fields Site

Site Topography

Similar to Alternative A and as discussed in **Appendix C**, no import or export of fill material will be required for Alternative B as it has been designed to be a balanced earthwork operation. Construction of

Alternative B would require approximately 80,000 cubic yards of both cut and fill, 51,000 cubic feet of which will be cut to create an infiltration/wet pond. Topographic features of the development area would be altered by earthwork. However, some project features, such as the access road, have been designed to match the existing grade in order to minimize earthwork.

The site is flat and does not contain any distinctive topographical features. On-site grading would facilitate proper drainage. Development of Alternative B, given the proposed design (**Section 2.4**) and flat topography, would result in a minimal impact on topography. No adverse effect to topography on the Strawberry Fields Site would occur under Alternative B and no mitigation is required.

Soils and Geology

Given that Alternative B is a reduced intensity development on the same development area as Alternative A, potential impacts to soil due to erosion and corrosivity during construction of Alternative B are similar to those associated with Alternative A. As with Alternative A, Alternative B would be constructed in compliance with the NPDES General Construction Permit for sediment control and erosion prevention into navigable (surface) Waters of the U.S.

The design and construction of Alternative B, through adherence to the NPDES General Construction Permit and BMPs to minimize impacts relative to soil corrosivity, would not significantly affect soils on the Strawberry Fields Site. **Section 5.2** provides BMPs that would be included as a part of the SWPPP and project design. With incorporation of the BMPs, effects from construction of Alternative B on soils and geology would be further minimized.

Seismicity

The on-site geological conditions of the Strawberry Fields Site under Alternative B are the same as for Alternative A. Project-related impacts from seismicity with the implementation of Alternative B would also have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

The volcanic hazard conditions of the Strawberry Fields Site under Alternative B are the same as for Alternative A. Project-related impacts from volcanic activity with the implementation of Alternative B would also have a less-than-significant impact and no mitigation would be required.

Mineral Resources

As discussed in **Section 3.2.2**, there are no known or recorded mineral resources within the Strawberry Fields Site, therefore, construction and operation of Alternative B would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative B and no mitigation is required.

Off-site Access Improvements

Impacts to topography, soils and geology, seismicity, and mineral resources resulting from Site Access Option 1 and 2 under Alternative B would be the same as Alternative A (**Section 4.2.1**).

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Impacts resulting from the renovation of the existing casino under Alternative B would be the same as Alternative A (**Section 4.2.1**).

4.2.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Development at the Strawberry Fields Site

Site Topography

Similar to Alternative A, as discussed in **Appendix C**, no import or export of fill material will be required for Alternative C as it has been designed to be a balanced earthwork operation. Construction of Alternative C would require approximately 94,000 cubic yards of both cut and fill, 65,000 cubic feet of which will be cut to create an infiltration/wet pond. Topographic features of the development area would be altered by earthwork. However, some project features, such as the access road, have been designed to match the existing grade in order to minimize earthwork.

The site is flat and does not contain any distinctive topographical features. On-site grading would facilitate proper drainage. Development of Alternative C, given the proposed design (**Section 2.5**), would result in a minimal impact on topography. No adverse effect to topography on the Strawberry Fields Site would occur under Alternative C and no mitigation is required.

Soils and Geology

Given that Alternative C is a reduced intensity development on the same development area of the Strawberry Fields Site as Alternative A, potential impacts to soil due to erosion and corrosivity during construction of Alternative C are similar to those associated with Alternative A. As with Alternative A, Alternative C would be constructed in compliance with the NPDES General Construction Permit for sediment control and erosion prevention into navigable (surface) Waters of the U.S.

The design and construction of Alternative C, through adherence to the NPDES General Construction Permit and BMPs to minimize impacts relative to soil corrosivity, would not significantly affect soils on the Strawberry Fields Site. **Section 5.2** provides BMPs that would be included as a part of the SWPPP and project design. With incorporation of the mitigation, effects from construction of Alternative C on soils and geology would be further minimized.

Seismicity

The on-site geological conditions of the Strawberry Fields Site under Alternative C are the same as for Alternative A. Project-related impacts from seismicity with the implementation of Alternative C would also have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

The volcanic hazard conditions of the Strawberry Fields Site under Alternative C are the same as for Alternative A. Project-related impacts from volcanic activity with the implementation of Alternative C would also have a less-than-significant impact and no mitigation would be required.

Mineral Resources

As discussed in **Section 3.2.2**, there are no known or recorded mineral resources within the Strawberry Fields Site, therefore, construction and operation of Alternative C would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative C and no mitigation is required.

Off-site Access Improvements

Impacts to topography, soils and geology, seismicity, and mineral resources resulting from Site Access Option 1 and 2 under Alternative C would be the same as Alternative A (**Section 4.2.1**).

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Impacts resulting from the renovation of the existing casino under Alternative C would be the same as Alternative A (**Section 4.2.1**).

4.2.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE**Strawberry Fields Site*****Site Topography***

Similar to Alternative A and as discussed in **Appendix C**, no import or export of fill material will be required for Alternative D as it has been designed to be a balanced earthwork operation. Construction of Alternative D would require approximately 75,000 cubic yards of both cut and fill. 45,000 cubic feet will be cut to create an infiltration/wet pond. Topographic features of the development area would be altered by earthwork. However, some project features, such as the access road, have been designed to match the existing grade in order to minimize earthwork.

The site is flat and does not contain any distinctive topographical features. On-site grading would facilitate proper drainage. Development of Alternative D, given the proposed design (**Section 2.6**), would

result in a minimal impact on topography. No adverse effect to topography on the Strawberry Fields Site would occur under Alternative D and no mitigation is required.

Soils and Geology

Given that Alternative D is a reduced intensity development on the same development area of the Strawberry Fields Site as Alternative D, potential impacts to soil due to erosion and corrosivity during construction of Alternative D are similar to those associated with Alternative A. As with Alternative A, Alternative D would be constructed in compliance with the NPDES General Construction Permit for sediment control and erosion prevention into navigable (surface) Waters of the U.S.

The design and construction of Alternative D, through adherence to the NPDES General Construction Permit and BMPs to minimize impacts relative to soil corrosivity, would not significantly affect soils on the Strawberry Fields Site. **Section 5.2** outlines BMPs that would be included as a part of the SWPPP and project design. With incorporation of the mitigation, effects from construction of Alternative D on soils and geology would be less than significant.

Seismicity

The on-site geological conditions on the Strawberry Fields Site under Alternative D are the same as for Alternative A. Project-related impacts from seismicity with the implementation of Alternative D would also have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

The volcanic hazard conditions of the Strawberry Fields Site under Alternative D are the same as for Alternative A. Project-related impacts from volcanic activity with the implementation of Alternative D would also have a less-than-significant impact and no mitigation would be required.

Mineral Resources

As discussed in **Section 3.2.2**, there are no known or recorded mineral resources within the Strawberry Fields Site, therefore, construction and operation of Alternative D would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative D and no mitigation is required.

Site Access Option 1 and 2

Impacts to topography, soils and geology, seismicity, and mineral resources resulting from Site Access Option 1 and 2 under Alternative D would be the same as Alternative A (**Section 4.2.1**).

4.2.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Site Topography

As discussed in **Appendix C**, no import or export of fill material will be required for Alternative E as it has been designed to be a balanced earthwork operation. Alternative E requires a large amount of fill within the 100-year floodplain, therefore an excavation equal to that fill volume will be constructed. Accordingly, two large retention ponds will be constructed on the southern portion of Anderson Site. Overall, construction of Alternative E would require approximately 138,000 cubic yards of both cut and fill, with 99,000 cubic feet cutoff cut needed to create stormwater retention ponds. Topographic features of the development area would be altered by earthwork.

The site is flat and does not contain any distinctive topographical features. On-site grading would facilitate proper drainage. Development of Alternative E, given the proposed design (**Section 2.7**), would result in a minimal impact on topography. No adverse effect to topography on the Anderson Site would occur under Alternative E and no mitigation is required.

Soils and Geology

Alternative E could temporarily adversely affect soils due to erosion during construction from activities such as clearing, grading, trenching, and backfilling. The soils on the Anderson Site have a slight erosion potential based on soil type and slope gradient (**Table 3.2-3** in **Section 3.2.2**).

As part of the NPDES General Construction Permit with which project construction would comply, a SWPPP must be prepared and implemented. The SWPPP must make provisions for erosion prevention and sediment control and control of other potential pollutants.

Although some soils within the Anderson Site are characterized as being highly corrosive to steel, and are also characterized as being moderately corrosive to concrete, soils would be suitable for construction using standard engineering practices and by abiding by the IBC. BMPs have been included in **Section 5.2** to ensure appropriate measures are incorporated. With adherence to regulatory requirements including the implementation of a SWPPP and BMPs described therein, effects from Alternative E on soils and geology would be less than significant.

Seismicity

The nearest fault line is the Battle Creek Fault is approximately six miles south of the Anderson Site. However, similar to Alternative A, Alternative E would be constructed to standards consistent with the IBC guidelines. Therefore, development of Alternative E would have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

Due to its close proximity to the Strawberry Fields Site, the volcanic hazard conditions of the Anderson Site under Alternative E are the same as for Alternative A. Project-related impacts from volcanic activity with the implementation of Alternative E would also have a less-than-significant impact and no mitigation would be required.

Mineral Resources

As discussed in **Section 3.2.2**, there are no known or recorded mineral resources within the Anderson Site, construction and operation of Alternative E would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative E and no mitigation is required.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Impacts resulting from the renovation of the existing casino under Alternative E would be the same as Alternative A (**Section 4.2.1**).

4.2.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Site Topography

Expansion of the Win-River Casino under Alternative F will take place on previously graded and developed areas, largely within the existing parking lot (see **Figure 2-18**). Therefore, impacts to topography on the Win-River Casino Site under Alternative F would be less than significant. No mitigation is required.

Soils and Geology

Alternative F could temporarily adversely affect soils during construction from activities such as clearing, grading, trenching, and backfilling. The soils on the Win-River Casino Site have a slight erosion potential based on soil type and slope gradient (**Table 3.2-4** in **Section 3.2.2**).

Similar to Alternatives A through E, to reduce impacts from soil erosion, a SWPPP must be prepared and implemented as part of the NPDES General Construction Permit, as Alternative F would disturb more than one acre of land. The SWPPP must make provisions for erosion prevention and sediment control and control of other potential pollutants.

The soils within the Win-River Casino Site, as described in **Section 3.2.2**, are characterized as being moderately to highly corrosive to steel, and are also characterized as being moderately corrosive to concrete (NRCS, 2016b). In anticipation of these soil limitations, project design will incorporate protective measures to minimize adverse impacts relative to soil corrosivity. Additionally, BMPs have

been included in **Section 5.2** to prevent corrosivity to concrete and steel. With incorporation of these BMPs, impacts resulting from corrosive soils will be less than significant.

Seismicity

The nearest fault line is the Battle Creek Fault is approximately 13 miles south of the Win-River Casino Site. However, similar to Alternative A, Alternative F would be constructed to standards consistent with the IBC guidelines. Therefore, development of Alternative F would have no adverse effects related to seismic hazards. No mitigation is required.

Volcanic Hazard

Due to its close proximity to the Strawberry Fields Site, the volcanic hazard conditions of the Win-River Casino Site under Alternative F are the same as for Alternative A. Project-related impacts from volcanic activity with the implementation of Alternative F would also have a less-than-significant impact and no mitigation would be required.

Mineral Resources

As discussed in **Section 3.2**, there are no known or recorded mineral resources within the Win-River Casino Site, construction and operation of Alternative F would not adversely affect known or recorded mineral resources. No adverse impacts to mineral resources would occur under Alternative F and no mitigation is required.

4.2.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, neither the Strawberry Fields Site nor the Anderson Site would not be taken into trust and no development would occur in the near future on either site. Topographic features and soils would remain undisturbed. Additionally, no expansion would occur on the Win-River Casino Site. No significant effects relating to geology and soils would occur as a result of the No Action Alternative.

4.3 WATER RESOURCES

This section identifies the direct effects associated with water resources that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.3**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for adverse effects identified in this section are presented in **Section 5.0**.

ASSESSMENT CRITERIA

For surface water resources, each proposed alternative is analyzed to determine if either construction or operation would result in significant impacts to drainage patterns, floodplain management, and/or water quality. For groundwater resources, each proposed alternative is analyzed to determine if either construction or operation would result in significant impacts to groundwater levels and/or groundwater quality.

4.3.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

Surface Water

Flooding

As noted in **Section 3.3.2**, the western portion of the Strawberry Fields Site, along the Sacramento River, is almost entirely within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) designated 100-year floodplain of the Sacramento River; the remainder of the Strawberry Fields Site, with the exception of a small area in its southwest corner, is entirely within the 500-year floodplain (FEMA, 2011b). As shown in **Figure 2-8**, Alternative A has been designed to avoid development and the placement of fill within the 100-year floodplain. With the exception of a stormwater retention pond proposed to be located in the central portion of the site and the installation of bank stabilization materials along the Sacramento River in the northern portion of the site, the proposed development footprint of Alternative A, including all structures and infrastructure (including wastewater leachfields proposed under Wastewater Option 2), would be located entirely outside the FEMA designated 100-year floodplain.

Construction of the stormwater retention pond would be accomplished through balanced excavation and placement of fill within the floodplain; in other words, there would be no net increase in material or elevations within the floodplain (**Appendix C**). Similarly, proposed streambank stabilization measures within the floodplain would involve balanced removal and replacement of material within the floodplain. Because cut and fill material would be balanced on site and within the flood zones, Alternative A would not impede or redirect flows during a flood event, minimizing potential harm to the floodplain in accordance with Executive Order (EO) 11988. Additionally, the finished floor elevations of all structures

(there will be no basements) would be approximately 3 feet above the FEMA 100-year water surface elevation (**Appendix C**).

Although not noted on the FEMA FIRM for the site, in the northern portion of the Strawberry Fields Site within the development footprint for Alternative A, an estimated flow of 600 to 700 cubic feet per second (cfs), as identified by the State of California Department of Water Resources, could cross Interstate 5 (I-5) from the east (Churn Creek). The hydrologic and hydraulic model of Churn Creek shows that Churn Creek could overtop I-5, and that could cause shallow overflow across the project site. According to Caltrans, there are no historical records of this section of I-5 ever overtopping. Caltrans found a note in their files stating that not even in the large rainfall event of 1964, did Churn Creek overtop I-5 (**Appendix C**). However, in the event that this might happen the Proposed Project has been designed to convey possible floodwaters from Churn Creek that may overtop I-5 via a large newly constructed vegetated swale that parallels I-5 and discharges into the proposed infiltration wet pond south of the proposed development. As described in **Section 2.3.2**, a 40-foot wide, 5-foot deep vegetated swale is proposed to run north to south between the access road within the site and I-5 to provide a bypass channel for the potential 600 to 700 cfs flow coming westerly from Churn Creek during extreme rain events. The vegetated swale would pass south of the proposed development through a box culvert under the access road and to a 650,000-cubic foot water quality retention pond as shown in Figure A4 of **Appendix C**. Stormwater facilities under Alternative A, including the bypass channel, have been oversized by 35 percent to ensure excess capacity when handling flows from 100-year flood events (**Appendix C**). Alternative A would not impede the potential I-5 overflow and would not have a significant impact on flooding that occurs in the neighborhoods within the Churn Creek area.

No levees will be constructed as part of the project. Instead, the development will be raised by balanced on-site cut and fill to ensure structures are appropriately outside the 100-year floodplain. Because cut and fill will be balanced on site, no net loss or gain within the floodplain will occur off site and the floodplain capacity (the total volume of water within a defined site during a flood event, based on the existing topography of the site) will not be altered. Additionally, no construction and no fill within the 100-year floodplain is proposed under any of the development alternatives.

No significant flooding impacts would occur as a result of Alternative A. Mitigation measures included in **Section 5.5.3**, including consultation with FEMA and the United States Army Corps of Engineers (USACE) related to streambank stabilization measures along the Sacramento River, would further reduce potential impacts as a result of construction within the 500-year floodplains.

Construction Impacts

Construction activities under Alternative A would include ground-disturbing activities such as clearing and grubbing, mass grading, and excavation, which could lead to erosion of topsoil. Erosion from construction could increase sediment discharge to surface waters during storm events thereby degrading downstream water quality. Construction activities, typical of other development projects, would also

include the routine use of potentially hazardous construction materials such as concrete washings, solvents, paint, oil, and grease, which may spill onto the ground and be picked up by stormwater. Discharges of pollutants to surface waters from construction activities and accidents are a potentially significant impact.

As discussed in **Section 2.3.2**, and analyzed in **Section 4.2.1**, erosion control measures will be employed in compliance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit for construction activities. A Stormwater Pollution Prevention Plan (SWPPP) will be developed prior to any ground disturbance and would include Best Management Practices (BMPs) to reduce potential surface water contamination during storm events. Implementation of measures presented in **Section 5.2** and the BMPs incorporated into the SWPPP would reduce or prevent adverse effects to the local and regional watershed from construction activities on the Strawberry Fields Site. Therefore, after mitigation, Alternative A would not result in a significant adverse effect on water quality.

Stormwater Runoff

A drainage and stormwater treatment analysis for the project alternatives has been completed and is included in **Appendix C**. Implementation of Alternative A would alter the existing drainage pattern of the Strawberry Fields Site and increase stormwater runoff as a result of increased impervious surfaces in the northern portion of the site. This increase in impervious surfaces could impact the quantity and quality of stormwater runoff. As described in **Section 2.3**, Alternative A would convert up to approximately 37 acres of pastureland into a hotel and casino complex, sports retail facility, surface roads, and parking areas, which would result in an increase in stormwater runoff over pre-development rates during 2-, 10-, and 100-year storm events. Specifically, Alternative A would increase runoff from the overall developable project area (refer to Figure A6 in **Appendix C**) from the existing peak flows of 3 cfs, 7 cfs, and 19 cfs, respectively, to 87 cfs, 118 cfs, and 174 cfs, respectively (**Appendix C**).

Due to the increase in surface water runoff, one retention pond in the southern portion of the Strawberry Fields Site is included in the project design for Alternative A. As described in **Appendix C**, the wet pond would have a capacity of 650,000 cubic feet. The wet pond is sized to accommodate twice the runoff volume of the 85th percentile storm and would allow for infiltration of stormwater into the native soil. When the Sacramento River is at flood stage, the wet pond will be submerged. Runoff would be conveyed to this wet pond via a 40-foot wide, 5-foot deep vegetated swale that would run north to south along I-5, and between I-5 and the access road under Site Access Option 2; the vegetated swale would also provide stormwater filtration and infiltration and would provide a bypass channel for the potential 600 to 700 cfs of runoff flowing westerly from Churn Creek during extreme precipitation events. As stated in **Section 4.3.1**, overflow from Churn Creek across I-5 has not been observed or recorded by Caltrans, even during past large rainfall events (**Appendix C**). The maximum flow that the vegetated swale would be able to infiltrate is approximately 182 cfs, which is more than the 100-year peak flow of 174 cfs. A box culvert would be required if Site Access Option 2 is selected to allow the vegetated swale to pass beneath the South Access Road.

As described in **Appendix C**, several Low Impact Development (LID) BMPs, including the aforementioned vegetated swale and retention pond, have been incorporated within the design of the stormwater drainage system for Alternative A. Other LID BMPs incorporated in the project design include: the use of catch basin insert filters in parking lots and landscaped areas, which filter stormwater during periods of low flow by capturing contaminants and larger debris, thereby improving the quality of runoff before it enters the underground storm drain system; the use of infiltration trenches in place of underground storm drain pipes where feasible, which consist of perforated pipes placed in a drain rock-filled trenches, and would simulate the natural runoff absorption and filtration conditions that prevailed on the Strawberry Fields Site prior to development; and the use of pervious pavements in parking and outdoor pedestrian areas, which reduce runoff volume while providing treatment (**Appendix C**).

If not treated properly prior to discharge, stormwater runoff has the potential to significantly impact surface water quality. The aforementioned LID features included within the design of Alternative A, along with the erosion control measures listed in **Section 5.2**, would fully accommodate the differential stormwater runoff generated by Alternative A and would prevent this runoff from adversely impacting surface water quality. Accordingly, the implementation of Alternative A would not result in significant adverse effects related to stormwater runoff.

Sacramento River Streambank Stabilization

As described in **Section 3.3** and **Appendix C**, the east bank of the Sacramento River in the vicinity of the Strawberry Fields Site is actively eroding during periods of very high flow. Streambank stabilization measures, described in detail in **Section 2.3.2** and **Appendix C**, have been incorporated within the project design to slow the rate of erosion and reduce sedimentation. Streambank stabilization measures will utilize materials with rough surfaces similar to the existing rough surfaces along the bank. Boulders will be placed above the ordinary high water mark and against the flood water surface elevation, and then be covered with native cobbly alluvium. This hardened back will reduce erosion. Thus, these elements of the project design would have a potentially beneficial impact on the surface water quality of the Sacramento River in the vicinity of the Strawberry Fields Site by reducing the amount of fine sediment discharged into the river. Additionally, due to the relatively minimal extent of the material that would be added and the resulting changes to the Sacramento River's orientation that would occur as a result of these measures, streambank stabilization on the Strawberry Fields Site would not exacerbate rates of streambank erosion at locations downstream, increase the energy flow of the river, or otherwise alter the hydraulic performance of the Sacramento River. Therefore, the stabilization measures incorporated within the design of the Proposed Project would have a less-than-significant impact on regional surface water quality. Mitigation measures included in **Section 5.5.3**, including consultation with FEMA, USACE, and United States Environmental Protection Agency (USEPA) regarding the need for a Clean Water Act (CWA) Section 404 permit and 401 water quality certification, would further reduce potential impacts.

Surface Water Supply

As discussed in **Section 2.3.2**, Alternative A has two water supply options: off-site water supply (Option 1) and on-site water supply (Option 2). The maximum projected average daily potable water demand (including water used for landscape irrigation) for Alternative A would be approximately 221,319 gallons per day (gpd) with an estimated peak hour flow of approximately 385 gallons per minute (gpm) (**Appendix B**). Should an on-site wastewater treatment plant (WWTP) be developed (as described in **Section 2.3.2**), recycled water would be used for indoor non-potable uses and for landscaping, which would reduce the average day and peak hour potable water demands. Because the potable water demand of the Proposed Project would be supplied entirely through groundwater extracted from on-site wells under Water Supply Option 2, this option would have no impact on surface water supply.

Water Supply Option 1 involves connecting the Strawberry Fields Site to the City of Redding's municipal water supply system. The City of Redding's water supply system's total capacity is approximately 40,040 acre-feet per year (AFY), of which approximately 77.8 percent (31,140 AFY) is drawn from surface water sources (City of Redding, 2017d). The two primary surface water inputs to the City of Redding's water supply are the Sacramento River, from which the City is permitted to divert 21,000 AFY, and Whiskeytown Lake, from which the City can divert a maximum of 6,140 AFY (City of Redding, 2016c). The demand on the system in 2015 of 19,001 acre-feet (af) was only 62 percent of the system's total capacity (City of Redding, 2016a). The addition of 221,319 gpd (or approximately 247.9 AFY) in demand under Alternative A, Water Supply Option 1 would be the equivalent to 1.3 percent of the total 2015 demand, and would constitute only 1.2 percent of the current 21,039 AFY surplus within the City of Redding's water supply. Following the implementation of Alternative A, the municipal water supply would still have a surplus of approximately 20,791 AFY, based on 2015 water demand. Because of the current magnitude of the surplus within the City of Redding's water supply and due to the relatively small amount of demand that Water Supply Option 1 would add compared to the existing baseline, Alternative A, Water Supply Option 1 would not require the City of Redding to substantively alter their current surface water diversion practices or seek an additional surface water source. The implementation of water conservation measures provided in **Table 2-2** would further reduce the project's water demand. Thus, Alternative A would not have a significant impact on surface water supply, and no mitigation is necessary.

Groundwater

Groundwater Supply

As stated above, Alternative A has two water supply options: off-site water supply (Option 1) and on-site water supply (Option 2). Water Supply Option 1 involves connecting the Strawberry Fields Site to the City of Redding's municipal water supply system, while Water Supply Option 2 involves the drilling of an on-site groundwater well to supply the potable water demand of the Proposed Project.

Off-site Water Supply (Option 1)

The current total capacity of the City of Redding's water supply is approximately 40,040 AFY, of which approximately 22.2 percent (8,900 AFY) consists of groundwater drawn from the 17 municipal wells within the City of Redding (City of Redding, 2017e). As described in further detail above, the majority of the municipal water supply is drawn from surface water sources. Due to the current substantial supply surplus within the City of Redding's water system and the relatively small demand that would be added to that system under Alternative A, Water Supply Option 1 compared to the current baseline (approximately 1.3 percent of the total 2015 demand), the implementation of Alternative A, Water Supply Option 1 would not require the City of Redding to substantively alter its groundwater extraction rates or drill additional wells. The implementation of water conservation measures provided in **Table 2-2** would further reduce the project's water demand. Therefore, Alternative A, Water Supply Option 1 would have a less-than-significant impact on regional groundwater levels.

On-site Water Supply (Option 2)

Under Alternative A, Water Supply Option 2, the potable water demand of the Proposed Project would be supplied via a groundwater well drilled on site. It is anticipated that a single well drilled to a depth of 300 to 600 feet would be sufficient to supply both the average daily and peak hour water demands of the Proposed Project (**Appendix B**). The closest municipal wells to the Strawberry Fields Site are Municipal Well #1 and Municipal Well #6, which are located on the west bank of the Sacramento River approximately 0.5 miles south of the southwest corner of the Strawberry Fields Site (City of Redding, 2011). Because the on-site well would not be drilled in close proximity to the southwestern boundary of the Strawberry Fields Site, the distance between the on-site well and the nearest municipal well would be farther than 0.5 miles. Given this distance, the localized groundwater level drawdown associated with the operation of the proposed on-site well would have a less-than-significant impact on neighboring municipal wells. Additionally, extracting groundwater from a depth of 300 to 600 feet would not substantively reduce the water level of any neighboring residential wells, which tend to be drilled to significantly shallower depths (**Appendix B**).

As described in further detail in **Section 3.3**, the Redding Groundwater Basin, from which any on-site well would draw water, is non-adjudicated and is currently not in a state of overdraft; thus, pumping limits have not been set and no sustainable yield rate has yet been quantified. However, modelling of the Basin has indicated that it is resilient to severe drought conditions and is capable of recovering with one year of normal rainfall (City of Redding, 2016a). Additionally, as described in detail in **Section 3.3**, groundwater levels within the Redding Groundwater Basin and Enterprise Subbasin have remained relatively steady over time, with no prolonged periods of increases or decreases in groundwater level. Furthermore, as described in additional detail below, if the on-site wastewater treatment and disposal option (Option 2) is selected, a significant amount of the wastewater treated to disinfected tertiary recycled water standards at the on-site WWTP would be discharged to the on-site leach fields; a portion of this recycled water would permeate to the groundwater aquifer and would partially offset the total amount of water extracted from the aquifer via the on-site well. Further, the implementation of water

conservation measures provided in **Table 2-2** would further reduce the project's water demand. Thus, given the lack of current or historical groundwater supply issues in the Redding Groundwater Basin, the Basin's observed drought resiliency, and the amount of water that would be extracted, Alternative A, Wastewater Option 2 would have a less-than-significant impact on regional groundwater levels.

Groundwater Recharge

Alternative A would result in the conversion of pastureland to commercial uses, introducing up to 37 acres of impermeable surfaces within the site, including the casino, hotel, paved parking lots, and new roads. The introduction of these surfaces would reduce groundwater recharge in areas where surface percolation accounts for a large percentage of natural recharge. However, it should be noted that the total size of the groundwater basin is approximately 95 square miles (please refer to **Section 3.3**). Although the development of Alternative A would introduce approximately 37 acres of impermeable surfaces to the Strawberry Fields Site, the development of an on-site vegetated swale and wet pond for conveying, treating, and storing stormwater runoff would allow collected stormwater to percolate into the groundwater table. If on-site leach fields are constructed (under Wastewater Option 2), they would also contribute to groundwater recharge. Therefore, the introduction of impermeable surfaces on the Strawberry Fields Site under Alternative A would not have a significant adverse impact on groundwater recharge. No mitigation is warranted.

Groundwater Quality

Stormwater Runoff

The construction of Alternative A, similar to other development projects, would include the routine use of potentially hazardous construction materials such as concrete washings, solvents, paint, oil, and grease, which may spill onto the ground and enter stormwater. These pollutants may percolate to shallow groundwater from construction activities and cause a potentially significant impact. The BMPs in **Section 5.2** would prevent groundwater pollution during construction and reduce potential impacts to groundwater quality from construction to a less-than-significant level.

During project operation, runoff from Alternative A facilities could flush trash, debris, oil, sediment, and grease that accumulate on pavement and other impervious surfaces into stormwater runoff. Fertilizers used in landscaped areas could also enter stormwater if over-applied. As described in **Appendix C**, several features designed to filter surface runoff have been incorporated into the project design. These features include catch basin insert filters to remove suspended solids, such as trash and sediment; the use of vegetated swales, which would provide filtration for stormwater by capturing sediment and pollutants within vegetation and the surface soil matrix, thereby adequately filtering stormwater before it percolates to the groundwater table; the use of drain rock to filter stormwater and remove sediment; and the development of a wet pond to store and treat both stormwater runoff from the Strawberry Fields Site and, during extreme precipitation events, overland runoff from adjacent properties. Additionally, BMP's provided in **Table 2-2** would reduce potential effects to groundwater quality from landscaping. Thus,

given the project design and the erosion control measures described in **Section 5.2**, the impacts to groundwater quality from stormwater runoff would be less than significant under Alternative A.

Irrigation with Tertiary Treated Water

As described in **Section 2.3.2**, Alternative A, Wastewater Option 2 involves the on-site treatment and disposal of wastewater generated by the Proposed Project. The recycled water generated at the on-site membrane bioreactor (MBR) WWTP and used to irrigate landscaped areas of the Strawberry Fields Site would be treated to disinfected tertiary recycled water standards under Title 22 of the California Code of Regulations (CCR). Disinfected tertiary recycled water is approved for the irrigation of food crops, parks and playgrounds, and residential landscaping by the State of California, as well as for any other irrigation use not specified or prohibited in the CCR. The quality requirements of disinfected tertiary recycled water are described in detail in **Section 3.3.1**. The minimum coliform bacteria concentration standard for disinfected tertiary recycled water is the same as the minimum standard for groundwater quality within the Sacramento River Basin (CVRWQCB, 2016), and the quality of the recycled water applied at the surface would further improve by the time it percolates to the underlying aquifer due to the filtering effect of soils. While the irrigation strategy under Alternative A, Wastewater Option 2 does not constitute an official groundwater replenishment plan, the recycled water applied at the Strawberry Fields Site would nonetheless meet the minimum quality requirements to be used for groundwater replenishment via surface application, as provided in Section 60320.108(b) of Title 22 CCR. Thus, there would be no significant impacts to groundwater quality resulting from the irrigation of the Strawberry Fields Site with tertiary treated water. Alternative A, Wastewater Option 1 does not involve irrigation with tertiary treated water, and thus none of the potential impacts to groundwater quality associated with it would occur.

Application of Treated Effluent to the Leach Field Complex

As further described in **Section 2.3.2**, under Wastewater Option 2, wastewater treated at the on-site WWTP that is not utilized for outdoor and indoor uses would be discharged into a leach field complex located south of the casino and hotel on the Strawberry Fields Site. The 45-acre leach field complex has been sized to accommodate a rate of flow equal to double the projected average daily flow to avoid impacts associated with a failure of all or portions of the leach field; a 20 percent contingency has also been factored into the sizing of the leach field to avoid oversaturation of the soil and to account for prolonged periods of peak hourly flow (**Appendix B**). Because effluent discharged to the leach field complex would meet Title 22 CCR disinfected tertiary standards, the effects to groundwater quality of leach field discharge would be no more severe than effects associated with the use of treated wastewater for landscape irrigation. The disposal of wastewater on site via subsurface drainage would be regulated by the USEPA within the Underground Injection Control (UIC) program. The leach field complex would constitute a Class V injection well and would be registered with the USEPA as such. Therefore, impacts would be less than significant, and no mitigation is required. Alternative A, Wastewater Option 1 does not involve the on-site disposal of treated effluent, and thus none of the potential impacts to groundwater quality associated with it would occur.

Off-site Access Improvements

Surface Water

As shown in **Figure 3.3-1**, the North Access Improvement Area along Bechelli Lane south of Bonnyview Road is located partially within a FEMA designated 500-year floodplain, specifically the portion near the northern boundary of the Strawberry Fields Site; the remainder of the northern improvements would be located outside of both the 100-year and 500-year floodplains, as would the South Access Improvement Area (Adra Way). Thus, the off-site access improvements under both Alternative A, Site Access Option 1 and Alternative A, Site Access Option 2 would be in compliance with EO 11988.

Construction activities associated with developing the off-site access improvements under Alternative A would include ground-disturbing activities such as grading and excavation, which could lead to erosion of topsoil. Erosion from construction could increase sediment discharge to surface waters during storm events, thereby degrading downstream water quality. Construction activities, typical of other development projects, would also include the routine use of potentially hazardous construction materials such as concrete washings, solvents, paint, oil, and grease, which may spill onto the ground and be picked up by stormwater. Discharges of pollutants to surface waters from construction activities and accidents are a potentially significant impact.

As discussed in **Section 2.3.2**, and further analyzed in **Section 4.2**, erosion control measures would be employed in compliance with the NPDES General Construction Permit for construction activities. A SWPPP would be developed prior to any ground disturbance that would exceed one acre and would include BMPs to reduce potential surface water contamination during storm events. Implementation of BMPs presented in **Section 5.2** and incorporated into the SWPPP would reduce or prevent adverse effects to the local and regional watershed from construction of the off-site access improvements. Therefore, with the incorporation of measures included in **Section 5.2**, development of the off-site access improvements pursuant to Alternative A would not result in a significant adverse impact to water quality.

Drainage features, including curbs, gutters, storm drains, and/or culverts, have been incorporated within the design of the planned improvements to Bechelli Lane and Adra Way. These features would convey all stormwater runoff associated with the improved road segments to either the City of Redding's stormwater management system or to the on-site drainage features, which are each adequately sized to both retain all runoff and provide sufficient stormwater quality control. Combined with the erosion control BMPs described in **Section 5.2**, these design elements would ensure that the impacts to regional stormwater runoff and surface water quality would be less than significant.

Groundwater

Development of the off-site access improvements would involve no connections to the municipal potable water supply or the drilling of any wells. Thus, development of the off-site access improvements under Alternative A would not yield any significant impacts to regional groundwater levels. Furthermore,

because the off-site access improvements would occur primarily in areas that are already graded and/or paved, development of the infrastructure improvements would not include the addition of a significant amount of new impervious surfaces. Therefore, impacts to groundwater recharge would also be less than significant.

As with construction at the Strawberry Fields Site itself, construction of the off-site access improvements would include the routine use of potentially hazardous construction materials such as concrete washings, solvents, paint, oil, and grease, which may spill onto the ground and enter stormwater. These pollutants may percolate to shallow groundwater from construction activities and cause a potentially significant impact. The BMPs in **Section 5.2** would prevent groundwater pollution during construction and reduce potential impacts to groundwater quality from construction to a less-than-significant level.

During project operation, runoff on the improved road segments could flush trash, debris, oil, sediment, and grease that accumulate on pavement and other impervious surfaces into stormwater runoff. The aforementioned drainage features included within the designs of the roadway improvements would convey all stormwater flows associated with the improved road segments to retention areas that would fully accommodate and improve the quality of the runoff. Therefore, given the project design, the impacts to groundwater quality resulting from stormwater runoff associated with the off-site access improvements would be less than significant.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal services and housing uses. While the location of tribal governmental and service facilities may shift within the Reservation, no new uses would be created. Therefore, there would be no expected increase in water demands and wastewater flows and associated potential for impacts to water resources. Because no exterior improvements or construction activities would occur, no changes to stormwater runoff rates or water quality would occur.

4.3.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE Development at the Strawberry Fields Site

Surface Water

Like Alternative A, Alternative B includes on-site and off-site options for both water supply and wastewater treatment and disposal (refer to **Section 2.4**). Due to the reduced number of project components and the lower potable water demand, impacts to surface water resources under Alternative B would be the same as or slightly reduced relative to those identified under Alternative A, with the exception of impacts related to stormwater runoff. Alternative B would involve Sacramento River streambank stabilization measures identical to those analyzed under Alternative A.

Stormwater Runoff

As described in **Appendix C** and **Section 2.4**, Alternative B would introduce a maximum of approximately 27 acres of impervious surfaces to the Strawberry Fields Site. The increase in impervious surfaces would result in an increase in stormwater runoff over pre-development rates during 2-, 10-, and 100-year storm events. Specifically, Alternative B would increase runoff from the overall developable project area from the existing peak flows of 3 cfs, 7 cfs, and 19 cfs, respectively, to 64 cfs, 90 cfs, and 139 cfs, respectively (**Appendix C**).

Incorporated within the design of Alternative B is one retention pond with a volume of 510,000 cubic feet in the southern portion of the Strawberry Fields Site. A vegetated swale with characteristics identical to the one described under Alternative A would be constructed to convey stormwater runoff to the wet pond, provide filtration and infiltration, and act as a bypass for potential westerly flows from Churn Creek during extreme precipitation events. As stated in **Section 4.3.1**, overflow from Churn Creek across I-5 has not been observed or recorded by Caltrans, even during past large rainfall events (**Appendix C**). The vegetated swale would have an infiltration capacity of 182 cfs, which is significantly more than the projected 100-year storm event runoff flow of 139 cfs. Additionally, the same LID BMPs described in detail under Alternative A are included within the project design of Alternative B. The features incorporated within the design of Alternative B, along with the erosion control measures listed in **Section 5.2**, would fully accommodate the differential stormwater runoff generated by Alternative B and would prevent this runoff from adversely impacting surface water quality. Thus, the implementation of Alternative B would not result in significant adverse effects related to stormwater runoff.

Groundwater

As with surface water resources, impacts to groundwater resources under Alternative B would be similar or reduced relative to those described under Alternative A due to the reduction in the size and elimination of project components, and the resulting reduction in potable water demand (refer to **Section 2.4**). Thus, as with Alternative A, all impacts related to groundwater resources would be either less than significant (in the case of groundwater supply and groundwater recharge) or would be reduced to less-than-significant levels through the mitigation measures provided in **Section 5.2**.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative B would be very similar to those described under Alternative A. Therefore, impacts associated with flooding would be less than significant, while impacts to surface water resources resulting from construction and stormwater runoff would be reduced to less-than-significant levels pending the implementation of the BMPs described in **Section 5.2**. Similarly, impacts to groundwater supply and recharge would not be significant, while impacts to groundwater quality would be reduced to less-than-significant levels through the project design and the implementation of the BMPs described in **Section 5.2**. If Site Access Option 1 is implemented,

no impacts related to the construction and operation of the southern (Adra Way) off-site access improvements would occur.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative B would not result in any significant impacts to water resources.

4.3.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Development at the Strawberry Fields Site

Surface Water

As with Alternatives A and B, Alternative C includes on-site and off-site options for both water supply and wastewater treatment and disposal (refer to **Section 2.5**). Due to the similar size and orientation of development under Alternative C, impacts to surface water resources would be very similar to or less severe than those identified under Alternative A. Thus, no development would occur within a 100-year floodplain, and Alternative C would comply with EO 11988; potentially significant impacts related to construction activities would be reduced to less-than-significant levels through the implementation of the BMPs incorporated in the SWPPP and through the measures provided in **Section 5.2**; and the stormwater management features incorporated within the design of Alternative C (which are identical to those described under Alternative A) would ensure that impacts associated with stormwater runoff would be less than significant.

Groundwater

As with surface water resources, impacts to groundwater resources under Alternative C would be similar or reduced relative to those described under Alternative A due to the reduction in the size of project components, and the resulting reduction in potable water demand (refer to **Section 2.5**). Thus, as with Alternative A, all impacts related to groundwater resources would be either less than significant (in the case of groundwater supply and groundwater recharge) or would be reduced to less-than-significant levels through the mitigation measures provided in **Section 5.2**.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative C would be very similar to those described under Alternative A. Therefore, impacts associated with flooding would be less than significant, while impacts to surface water resources resulting from construction and stormwater runoff would be reduced to less-than-significant levels pending the implementation of the BMPs described in **Section 5.2**. Similarly, impacts to groundwater supply and recharge would not be significant, while impacts to groundwater quality would be reduced to less-than-significant levels through the project design and the implementation of the BMPs described in **Section 5.2**. If Site Access Option 1 is implemented,

no impacts related to the construction and operation of the southern (Adra Way) off-site access improvements would occur.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative C would not result in any significant impacts to water resources.

4.3.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Development at the Strawberry Fields Site

Surface Water

Like Alternatives A, B, and C, Alternative D includes on-site and off-site options for both water supply and wastewater treatment and disposal (refer to **Section 2.6**). Impacts to surface water resources under Alternative D would be the same as or reduced relative to those identified for Alternative A, with the exception of impacts related to stormwater runoff. Alternative D would involve Sacramento River streambank stabilization measures identical to those analyzed under Alternative A.

Stormwater Runoff

As described in **Appendix C** and **Section 2.6**, Alternative D would introduce a maximum of approximately 19 acres of impervious surfaces to the Strawberry Fields Site. The increase in impervious surfaces would result in an increase in stormwater runoff over pre-development rates during 2-, 10-, and 100-year storm events. Specifically, Alternative C would increase runoff from the overall developable project area from the existing peak flows of 3 cfs, 7 cfs, and 19 cfs, respectively, to 52 cfs, 73 cfs, and 117 cfs, respectively (**Appendix C**).

One retention pond with a volume of 450,000 cubic feet in the southern portion of the Strawberry Fields Site is incorporated within the design of Alternative D. A vegetated swale with characteristics identical to the one described under Alternative A would be constructed to convey stormwater runoff to the wet pond, provide filtration and infiltration, and act as a bypass for potential westerly flows from Churn Creek during extreme precipitation events. As stated in **Section 4.3.1**, overflow from Churn Creek across I-5 has not been observed or recorded by Caltrans, even during past large rainfall events (**Appendix C**). The vegetated swale would have an infiltration capacity of 182 cfs, which is significantly more than the projected 100-year storm event runoff flow of 117 cfs. As with Alternative A, LID BMPs, including catch basin insert filters, infiltration trenches, and pervious pavements, have been incorporated within the design of Alternative D to reduce and improve the quality of stormwater runoff (**Appendix C**). The features incorporated within the design of Alternative D, along with the erosion control measures listed in **Section 5.2**, would fully accommodate the differential stormwater runoff generated by Alternative D and would prevent this runoff from adversely impacting surface water quality.

Accordingly, the implementation of Alternative D would not result in significant adverse effects related to stormwater runoff.

Groundwater

As with surface water resources, impacts to groundwater resources under Alternative D would be similar or reduced relative to those described under Alternative A due to the reduction in the size and elimination of project components, and the resulting reduction in potable water demand (refer to **Section 2.4**). Thus, as with Alternative A, all impacts related to groundwater resources would be either less than significant (in the case of groundwater supply and groundwater recharge) or would be reduced to less-than-significant levels through the mitigation measures provided in **Section 5.2**.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative D would be very similar to those described under Alternative A. Therefore, impacts associated with flooding would be less than significant, while impacts to surface water resources resulting from construction and stormwater runoff would be reduced to less-than-significant levels pending the implementation of the BMPs described in **Section 5.2**. Similarly, impacts to groundwater supply and recharge would not be significant, while impacts to groundwater quality would be reduced to less-than-significant levels through the project design and the implementation of the BMPs described in **Section 5.2**. If Site Access Option 1 is implemented, no impacts related to the construction and operation of the southern (Adra Way) off-site access improvements would occur.

4.3.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Surface Water

Flooding

As noted in **Section 3.3.2**, a majority of the Anderson Site is located within the FEMA 100-year floodplain of the Tormey Drain; the remainder of the site, with the exception of a small portion along the southeastern boundary, is located within the 500-year (0.2 percent annual chance) flood area (refer to **Figure 3.3-2**). Much of the proposed development on the Anderson Site under Alternative E would be located within the current FEMA 100-year floodplain; however, grading of the Anderson Site has been planned such that the finished floor elevations of all proposed structures would be approximately 2 to 3 feet above the FEMA 100-year flood level of the Tormey Drain (**Appendix C**). Additionally, the grading for Alternative E would be a balanced earthwork operation, in which the cut and fill quantities would each equal 138,000 cubic yards. Thus, there would be no net introduction of fill within the FEMA 100-year floodplain, and pre-development flood levels at all locations up- and downstream of the Anderson Site would be maintained. Additionally, no levees would be constructed, no net loss or gain within the floodplain would occur, and the floodplain capacity will not be altered. However, because 36 af of the approximately 58 af of existing storage within the 100-year floodplain on the Anderson Site would be

filled as a result of the grading activities, a “Letter of Map Revision – Fill” would have to be issued by FEMA (**Appendix C**); the preparation and submission of a letter request is included as Mitigation Measure A in **Section 5.3**. This storage would be relocated to the southern portion of the Anderson Site in the form of detention ponds, as described below. Therefore, the impacts of Alternative E to the floodplain would be less than significant, and, provided that the “Letter of Map Revision – Fill” is filed with FEMA, Alternative E would be in compliance with EO 11988.

Construction Impacts

Construction activities proposed under Alternative E would include ground-disturbing activities such as grading and excavation, which could lead to erosion of topsoil on the Anderson Site. Erosion from construction could increase sediment discharge to surface waters during storm events, thereby degrading downstream water quality. Discharges of sediments and pollutants to surface waters from construction activities proposed under Alternative E would be a potentially significant impact.

Erosion control measures will be employed in compliance with the Phase I NPDES General Construction Permit for construction activities. A SWPPP will be developed prior to any ground disturbance at the Anderson Site and will include BMPs to reduce potential surface water contamination during storm events. Implementation of measures presented in **Section 5.2** and the BMPs incorporated into the SWPPP would reduce or prevent adverse effects to the local and regional watershed from construction activities on the Anderson Site. Therefore, Alternative E would not have significant construction-related impacts on water quality.

Stormwater Runoff

Implementation of Alternative E would alter the existing drainage pattern of the Anderson Site and increase stormwater runoff as a result of increased impervious surfaces in the northern portion of the site. This increase in impervious surfaces could impact the quantity and quality of stormwater runoff. Alternative E would convert approximately 25 acres of undeveloped land into a hotel and casino complex, sports retail facility, surface roads, and parking areas, which would result in an increase in stormwater runoff over pre-development rates during 2-, 10-, and 100-year storm events. Specifically, Alternative E would increase runoff from the overall developable project area from the existing peak flows of 4 cfs, 8 cfs, and 21 cfs, respectively, to 55 cfs, 76 cfs, and 115 cfs, respectively (**Appendix C**).

Two detention ponds in the southern portion of the Anderson Site, one west of Oak Street and the other east of Oak Street, are incorporated within the design of Alternative E (refer to Figure E4 of **Appendix C**). The two ponds would have a combined storage volume of 62 af, and the storage provided by these ponds would entirely offset the loss of 36 af of existing storage within the 100-year floodplain due to the infill of portions of the floodplain during grading of the Anderson Site (**Appendix C**). As with Alternatives A through D, LID BMPs, including the aforementioned detention pond complex, have been incorporated within the design of Alternative E. Other LID BMPs included within the design of

Alternative E include the use of catch basin insert filters in parking lots and landscaped areas, drainage inlets, pervious pavements, and a perforated storm drain placed within a drain rock infiltration trench; the trench will be capable of infiltrating peak stormwater flows at a rate of 38 cfs (**Appendix C**). These LID features would both improve the quality of stormwater runoff and convey the detention pond complex.

If not treated properly prior to discharge, stormwater runoff has the potential to significantly impact surface water quality. The aforementioned LID features included within the design of Alternative E, along with the erosion control measures listed in **Section 5.2**, would ensure that there is no net increase in stormwater runoff downstream of the Anderson Site and would prevent this runoff from adversely impacting surface water quality. Accordingly, the implementation of Alternative E would not result in significant adverse effects related to stormwater runoff.

Groundwater

Groundwater Supply

Like Alternatives A through D, Alternative E involves two water supply options: off-site water supply (Option 1) and on-site water supply (Option 2). Water Supply Option 1 involves connecting the Anderson Site to the City of Anderson's municipal water supply system, while Water Supply Option 2 involves the drilling of an on-site groundwater well to supply the potable water demand of Alternative E. The estimated average daily potable water consumption (including water used for landscape irrigation) for Alternative E would be approximately 203,800 gpd with an estimated peak hour flow of approximately 372 gpm (**Appendix B**). The implementation of water conservation measures provided in **Table 2-2** would further reduce the project's water demand.

Off-site Water Supply (Option 1)

Residences in the vicinity of the Anderson Site are served by a high-producing groundwater well, the Automall Well, operated by the City of Anderson. The Automall Well is located directly adjacent to the northeast corner of the Anderson Site (refer to Exhibit 4 of **Appendix B**). As described in detail in **Section 3.3.2**, the Anderson Site, like the Strawberry Fields Site, overlies the Redding Groundwater Basin. Refer to **Section 3.3.2** for a detailed description of the Basin; as noted therein, the Basin is currently not in a state of overdraft and has historically demonstrated resilience to drought conditions. The City of Anderson has indicated that its existing groundwater supply system is sufficient to meet the projected potable water demand of Alternative E (**Appendix B**). Therefore, the implementation of Alternative E, Water Supply Option 1 would not require the City of Anderson to substantively alter its groundwater extraction rates or drill additional wells, and Alternative E, Water Supply Option 1 would have a less-than-significant impact on regional groundwater levels.

On-site Water Supply (Option 2)

Under Alternative E, Water Supply Option 2, the potable water demand would be supplied via a groundwater well drilled on site. As with Alternative A, Water Supply Option 2, it is anticipated that a

single well drilled to a depth of 300 to 600 feet would be sufficient to supply both the average daily and peak hour water demands of Alternative E (**Appendix B**). The closest municipal well to the Anderson Site is the above-described Automall Well, located immediately adjacent to the northeast corner of the Anderson Site (**Appendix B**). To prevent localized drawdown of the groundwater table resulting from the operation of the on-site well from impacting the Automall Well and all other neighboring wells, the on-site well would be drilled no closer than 100 feet from any existing well (**Appendix B**). As with Alternative A, the operation of the on-site well under Alternative E, Water Supply Option 2 would not significantly impact the water level within any shallow residential wells (**Appendix B**). A detailed description of the Redding Groundwater Basin is provided in **Section 3.3.2**. Because Alternative E would pump less water from the Redding Groundwater Basin than Alternative A, the impacts of Alternative E, Water Supply Option 2 on regional groundwater levels would, like those of Alternative A, Water Supply Option 2, be less than significant.

Groundwater Recharge

Alternative E would result in the conversion of undeveloped land to commercial uses, introducing up to 25 acres of impermeable surfaces within the Anderson Site, including the casino, hotel, outdoor sports retail facility, paved parking lots, and new roads. The introduction of these surfaces has the potential to reduce groundwater recharge, as percolation from precipitation events and surface water bodies is the primary source of recharge within the Anderson Subbasin (DWR, 2004b). Although the development of Alternative E would introduce approximately 25 acres of impermeable surfaces to the Anderson Site, the development of two on-site wet ponds for the retention and treatment of stormwater runoff would allow collected stormwater to percolate into the groundwater table. Therefore, the introduction of impermeable surfaces on the Anderson Site under Alternative E would not have a significant adverse impact on groundwater recharge. No mitigation is warranted.

Groundwater Quality

The construction of Alternative E, similar to the construction of Alternative A through D, would include the routine use of potentially hazardous construction materials such as concrete washings, solvents, paint, oil, and grease, which may spill onto the ground and enter stormwater. These pollutants may percolate to shallow groundwater from construction activities and cause a potentially significant impact. The BMPs in **Section 5.2** would prevent groundwater pollution during construction and reduce potential impacts to groundwater quality from construction to a less-than-significant level.

During project operation, runoff from Alternative E facilities could flush trash, debris, oil, sediment, and grease that accumulate on pavement and other impervious surfaces into stormwater runoff. Fertilizers used in landscaped areas could also enter stormwater if over-applied. As described in **Appendix C**, several features designed to filter surface runoff have been incorporated into the project design. These features include catch basin insert filters to remove suspended solids, such as trash and sediment; the use of drain rock to filter stormwater and remove sediment and contaminants; and the development of a wet

pond complex to store and treat stormwater runoff from Drainage Area #1 of the Anderson Site. Because Alternative E does not involve an on-site wastewater treatment and disposal option, the potential impacts to groundwater associated on-site disposal and described under **Section 4.3.1** would not occur. Additionally, BMP's provided in **Table 2-2** would reduce potential effects to groundwater quality from landscaping. Thus, given the project design and the erosion control measures described in **Section 5.2**, the impacts to groundwater quality from stormwater runoff would be less than significant under Alternative E.

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative E would not result in any significant impacts to water resources.

4.3.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Surface Water

Flooding

As noted in **Section 3.3.2**, the small northwestern portion of the Win-River Casino Site along Clear Creek is within the FEMA 100-year floodplain. However, the proposed development footprint of Alternative F is located entirely outside the FEMA 100-year and 500-year floodplains. No associated structures, utility, wastewater treatment and disposal systems, or storage areas are proposed for development within the 100-year and 500-year floodplains on the site. No significant flooding impacts would occur as a result of Alternative F, and no development is proposed within the floodplain; therefore, Alternative F is in compliance with EO 11988.

Construction Impacts

Construction of Alternative F would occur in areas already developed into impervious surfaces, such as parking lots. However, Alternative F could result in sediment erosion, off-site movement of hazardous materials and pollutants, and impacts to surface water and groundwater quality.

As discussed in **Section 2.8** and in **Section 4.2.6**, erosion control measures will be employed in compliance with the Phase I NPDES General Construction Permit for construction activities during construction. A site-specific SWPPP will be developed prior to any ground disturbance on the Win-River Casino Site and will include BMPs to reduce potential surface water contamination during storm events. Implementation of the BMPs presented in **Section 5.2** and the BMPs incorporated into the SWPPP would reduce or prevent adverse effects to the local and regional watershed from construction activities on the Win-River Casino Site. Therefore, after mitigation, Alternative F would not result in a significant adverse effect on water quality.

Stormwater Runoff

Because the Win-River Casino Site is already graded and developed, and because almost all construction would occur in areas that are currently paved, implementation of Alternative F would not significantly alter the existing drainage pattern of the Win-River Casino Site, nor would it add a significant amount of impervious surfaces. Significant renovations to or expansions of existing stormwater management infrastructure would not be required to accommodate the development proposed under Alternative F. Therefore, impacts associated with stormwater runoff would be less than significant, and no mitigation is required.

Surface Water Supply

Under Alternative F, the City of Redding would continue to supply water to the Win-River Casino Site. The estimated increase in average daily water demand at the Win-River Casino Site due to the implementation of Alternative F would be approximately 4,000 gpd, with an increase in weekend peak demand of approximately 6,000 gpd (**Appendix B**). Refer to **Section 4.3.1** for a detailed analysis of the surface water capacity of the City of Redding's municipal water system and the system's current supply surplus. Because potable water consumption under Alternative F would be significantly less than under Alternative A, the impacts of Alternative F on the regional surface water supply would be less than significant, and no mitigation is required.

Groundwater***Groundwater Supply***

As stated above, the Win-River Casino Site would continue to be connected to the City of Redding's municipal water supply under Alternative F; refer to **Section 4.3.1** for a detailed description of the groundwater capacity of the City of Redding's municipal water system. Because potable water consumption under Alternative F would be significantly less than under Alternative A, the impacts of Alternative F on regional groundwater levels would be less than significant. No mitigation is warranted.

Groundwater Recharge

As described above, development of Alternative F would not introduce significant areas of impervious surfaces to the Win-River Casino Site, as the Win-River Casino Site is already graded and developed, and expansion would occur almost exclusively in areas that are currently paved. Thus, implementation of Alternative F would not cause a significant impact to groundwater recharge, and no mitigation is required.

Groundwater Quality

As with previous alternatives, the development of Alternative F would include the routine use of potentially hazardous construction materials that have the potential to percolate to shallow groundwater if accidental releases were to occur, which would constitute a potentially significant impact. The BMPs in

Section 5.2 would minimize groundwater pollution during construction of Alternative F and reduce the potential impacts from construction to less-than-significant levels.

As with Alternatives A through E, during project operation, runoff from Alternative F project facilities could flush contaminants that accumulate on pavement and other impervious surfaces into stormwater. However, because Alternative F would not increase the area of impervious surfaces within the Win-River Casino Site, the amount of contaminants flushed into stormwater subsequent to the development of Alternative F would not increase over existing conditions. Additionally, because the size of the existing landscaped area at the Win-River Casino Site is small and would not increase significantly under Alternative F, the impacts associated with fertilizer leaching into stormwater runoff would be less than significant. Therefore, the impacts to groundwater quality from stormwater runoff would not be significant under Alternative F, and no mitigation is necessary.

4.3.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, none of the alternative sites would be taken into trust. No development would occur, and no expansion would occur on the Win-River Casino Site. No significant effects to water resources would occur. No mitigation is required.

4.4 AIR QUALITY

This section identifies the direct effects to air quality that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.4**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively.

Assessment Criteria

Adverse effects to ambient air quality could result if either construction or operation would result in violations of the federal Clean Air Act (CAA) provisions, or if emissions would impede a state's ability to meet National Ambient Air Quality Standards (NAAQS).

While the alternative sites are located within the Sacramento Valley Air Basin (SVAB) and the Shasta County Air Quality Management District's (SHAQMD's) jurisdictional boundaries, SHAQMD thresholds do not apply to federal actions. However, because the Off-site Access Improvement Areas are located within the City of Redding (City) and Shasta County (County) boundaries and would be subject to City and County approvals, emissions resulting from the off-site access improvements are compared to SHAQMD emission thresholds. The effects of proposed federal actions on SHAQMD air quality management are assessed under General Conformity as required under the CAA.

4.4.1 METHODOLOGY

Development and operation of the project alternatives would emit criteria air pollutants (CAPs), hazardous air pollutants (HAPs), and greenhouse gases (GHGs). During construction, CAPs, HAP and GHG emissions from earth-moving activities, diesel-fueled trucks, and construction equipment would occur. During operation criteria pollutants, HAPs, and GHG emissions from patron, worker, and delivery vehicles and on-site stationary sources (i.e. boilers and stoves) would occur. This section presents the methodology used to assess the affected environment and to evaluate the potential air quality effects of the project alternatives.

Construction Analysis

Construction would entail mass earthwork, fine grading, and building, road, and parking lot construction. A variety of heavy equipment, including trucks, scrapers, excavators, and graders, would be used to complete each phase. Effects on air quality during construction were evaluated by estimating the amount of criteria pollutants that would be emitted over the duration of the construction period (for each phase of construction where applicable). Particulate matter less than 2.5 microns in diameter (PM_{2.5}) and ozone precursors are the primary pollutant of concern resulting from operation of construction equipment, earth-moving activities, and soil hauling.

Reactive organic gases (ROGs), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and diesel particulate matter (DPM) emissions from construction would primarily be produced by diesel-fueled equipment use. The majority of these emissions would be from on and off-road construction equipment and truck use at the alternative sites. Emissions from construction equipment were calculated using the United States Environmental Protection Agency (USEPA) approved 2016 California Emissions Estimator Model, Version 2016.3.1 (CalEEMod; CalEEMod, 2016). A detailed list of the proposed equipment and emissions resulting from the equipment is located in **Appendix I**.

The majority of particulate matter less than 10 microns in diameter (PM₁₀) and PM_{2.5} emissions would result from fugitive dust generated during earth-moving activities, such as site grading. CalEEMod was used to estimate PM₁₀ and PM_{2.5} project related emissions and precursors from equipment exhaust and fugitive dust. CAP emissions were estimated assuming that construction would begin in July 2019 and continue at an average rate of 22 days per month for all project alternatives. The construction duration for project Alternatives A, B, and E was assumed to be 18 months, 14 months for Alternative C and D, and 9 months for Alternative F¹. Emissions results are summarized below and CalEEMod output files are included in **Appendix I**.

Operational Analysis

CalEEMod was also used to estimate emissions associated with near-term operation of the project alternatives. Input values for the CalEEMod included data from the Traffic Impact Study (TIS) provided in **Appendix F**, and water/wastewater and solid waste generation estimates from **Section 4.10**. Trip generation specific to each of the project alternatives provided in the TIS was incorporated into CalEEMod.

Because Alternatives A, B, C, and E would involve the closure of the existing Win-River Casino and the conversion of the facility into tribal services and housing uses, trip generation rates for Alternatives A, B, C, and E incorporated into CalEEMod from the TIS have been adjusted to account for the reduction in trips on the roadway network traveling to the Win-River Casino as determined by traffic counts. As noted in **Appendix F** (page 68), the change in use at the Win-River Casino Site is expected to result in no more than one-third of the trips that currently access the existing Win-River Casino remaining on the network. Additionally, CalEEMod provides an input for the percentage of diverted-link trips, which are vehicles that are already on the road and decide to make a stop along the way to their original destination. The TIS estimates diverted pass-by-trips to be 10 percent for casino and retail land for Alternatives A, B, C, and E and 15 percent for all land uses for Alternative D. A 30 percent reduction in the trip generation rate for the event and conference centers would be incorporated in the CalEEMod air quality model because the event and conference centers will not be used on a daily basis throughout the year. It is anticipated that

¹ Although the actual build out of all project components and duration of construction activities may take longer than these timelines, it is conservative to assume all construction takes place over a shorter timespan as this approach results in higher estimates of daily and annual emissions.

these facilities would be used approximately 256 days annually based on similar Indian casino/hotel facilities and the Tribes understanding that event and conference centers at Indian casinos are not always booked. The 30 percent reduction is based on 365 days/256 days multiplied by 100 equals 30 percent. The 30 percent trip generation reduction for similar facilities has been incorporated into the CalEEMod air quality model for similar Indian casino projects. As stated in **Section 2.0**, the conference and event centers are not expected to be used more than 256 days per year.

The average length of vehicle trips associated with the casino land use are expected to be longer than the default trip length values included in CalEEMod. Therefore, project-specific trip length values were developed and are shown in the **Appendix I**; these values are used in the following air quality analysis.

For each of the project alternatives, it is assumed that natural gas would be used as fuel for hot water boilers, space heating, water heaters, steam boilers for food service, and cooking equipment. Annual gas usage is estimated based on casino/hotel and recreational facilities of similar or greater size.

Appendix I includes additional details regarding CalEEMod inputs as well as the CalEEMod output files.

Federal General Conformity

Conformity regulations (CAA 40 Code of Federal Regulations [CFR] Part 93) apply to Federal actions that would cause emissions of CAPs above certain levels to occur in locations designated as non-attainment or maintenance areas for the emitted pollutants. If project-related construction emissions from a Federal action occurs in a location designated as attainment or unclassified, then the general conformity regulation does not apply. As discussed in **Section 3.4** all the alternative sites are located in an area that is classified as attainment or unclassified for all CAPs under the NAAQS. Since project-related direct and indirect emissions would occur in an attainment or unclassified area, a general conformity review is not required prior to federal action; therefore, no further general conformity analysis is warranted.

Carbon Monoxide Hot Spot Analysis

Implementation of the project alternatives would result in emissions of CO. Because CO disperses rapidly with increased distance from the source, emissions of CO are considered localized pollutants of concern rather than regional pollutants, and can be evaluated by Hot Spot Analysis. In accordance with 40 CFR 93.123, quantitative analysis is required if the following criteria are met:

- For projects in or affecting locations, areas, or categories of sites which are identified in the applicable implementation plan as sites of violation or possible violation;
- For projects affecting intersections that are at level of service (LOS) D, E, or F, or those that will change to LOS D, E, or F because of increased traffic volumes related to the project;

- For any project affecting one or more of the top three intersections in the CO nonattainment or maintenance area with highest traffic volumes, as identified in the applicable implementation plan; and
- For any project affecting one or more of the top three intersections in the CO nonattainment or maintenance area with the worst LOS, as identified in the applicable implementation plan.

The project alternatives are not in an area or category of site that has been identified in a CO plan. The project alternatives are not located in a CO nonattainment or maintenance area. As shown in the TIS, provided as **Appendix F**, there are intersections which in the baseline conditions operate at LOS C or better and with project traffic would operate at LOS D with mitigation measures implemented. Therefore, a quantitative CO screening analysis is required.

Since SHAQMD and the County do not have a methodology for quantifying CO hot spots, the Bay Area Air Quality Management District's (BAAQMD's) CO Screening Analysis was used to identify CO hot spots at project intersections where operation has been reduced to a LOS D, E, or F. Using the BAAQMD Simplified Caline4 Screening Model provided in the BAAQMD approved 1999 California Environmental Quality Act (CEQA) Guidelines and stated in its 2011 CEQA Guidelines, the following data was used to calculate CO emission concentrations:

- 1-hour background concentration used was the second highest concentration recorded during the last two years in the SVAB by the California Air Resources Board (CARB);
- 8-hour background concentration was the ambient average 8-hour CO concentration in the U.S. in 2013, provide by the USEPA;
- CO emission factor is from the EMFAC2014 model, using an average vehicles and light trucks emission factors; and
- Hourly traffic volumes provided in the TIS, **Appendix F**.

CO concentration levels at a given intersection would be considered significant when the NAAQS are violated for the 1-hour and 8-hour standards (Caltrans, 2014).

Climate Change

This Environmental Impact Statement (EIS) considers whether project emissions have individual or cumulative effects on climate change. Given the global nature of climate change impacts, individual project impacts are most appropriately addressed in terms of the incremental contribution to a global cumulative impact (provided in **Section 4.15**). Therefore, refer to **Section 4.15** for a discussion and analysis of cumulative impacts related to climate change.

Federal Class I Areas

If any alternative emits greater than the Prevention of Significant Deterioration (PSD) threshold of 250 tons per year (tpy) of any one criteria pollutant from stationary sources during construction or operation then a best available control technology (BACT) analysis will be conducted. As stated in **Section 3.4**, Lassen Volcanic National Park is within the preconstruction review distance of all alternative sites, and therefore analysis is required.

Tribal New Source Review (NSR)

The Tribe would be required to apply for a permit under the minor New Source Review (NSR) requirement of the CAA under 76 FR 38748 (Review of New Sources and Modifications in Indian Country, July 1, 2011) if stationary source operational emissions of regulated pollutants within Indian Country would exceed the thresholds presented in **Section 3.4, Table 3.4-2**. For this analysis stationary source project related operational emission will be quantified and compared to the applicable threshold.

4.4.2 ALTERNATIVE A – PROPOSED PROJECT

Construction Emissions

Construction of Alternative A would emit PM₁₀, NO_x, SO₂, CO, ROG, GHGs, and HAPs (primarily in the form of DPM) from the operation of construction equipment and grading activities. Emissions from construction equipment have the potential to increase the concentration of DPM in the close vicinity (within approximately 500 feet) of the construction site, if control measures are not implemented.

Construction is assumed to begin in July 2019 and last approximately 18 months². Construction is assumed to occur 8-hours a day, 5 days a week. Due to the proximity of the Strawberry Fields Site to nearby sensitive receptors, construction emissions of fugitive dust and DPM have the potential to result in adverse effects associated with odor and health risk. To reduce project-related construction fugitive dust and DPM emissions, Best Management Practices (BMPs) are provided in **Section 2.3.2**. BMPs provided in **Section 2.3.2** would reduce DPM emissions from construction equipment by approximately 70 percent, avoiding potentially adverse effects to nearby sensitive receptors. Construction emission totals for Alternative A, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-1**. CalEEMod input and output files are included as **Appendix I**.

The Strawberry Fields Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity

² As noted above and in other chapters of this EIS, the timeline for actual build out of all project components is anticipated to occur over a number of years with full-buildout in 2025; however, it is conservative to assume construction takes place over a shorter timespan as this approach results in higher estimates of daily and annual emissions. Further, it is conservative to assume an earlier year for construction activities as emissions are expected to go down in future years due to advancements in technology and regulatory restrictions.

determination is required for Alternative A construction. As shown in **Table 4.4-1**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and the Proposed Project would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

TABLE 4.4-1
ALTERNATIVE A CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019						
Alt A at Strawberry Fields Site	0.16	2.21	2.18	0.004	0.65	0.32
Off-site Access Improvements	0.04	0.40	0.26	0.001	0.03	0.01
<i>Sub-total</i>	<i>0.20</i>	<i>2.61</i>	<i>2.44</i>	<i>0.005</i>	<i>0.68</i>	<i>0.33</i>
2020						
Alt A at Strawberry Fields Site	3.97	5.22	5.69	0.016	0.68	0.21
Off-site Access Improvements	0.16	0.69	0.94	0.02	0.04	0.04
<i>Sub-total</i>	<i>4.13</i>	<i>5.91</i>	<i>6.63</i>	<i>0.036</i>	<i>0.72</i>	<i>0.25</i>
Maximum Year Emissions	4.13	5.91	6.63	0.36	0.72	0.33
De Minimis Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016 (Appendix I).						

With the incorporation of BMPs, construction of Alternative A would not result in significant adverse effects associated with the regional air quality environment.

Operational Vehicle and Area Emissions

Buildout of Alternative A would result in the generation of mobile CAPs, GHG, and HAP emissions from patron, employee, and delivery vehicles, as well as area and energy CAPs, GHG, and HAP emissions from combustion of natural gas in boilers, stoves, heating units, and other equipment on site. The Tribe will implement a number of operational BMPs as listed in **Section 2.3.2** that will reduce emissions resulting from the project, such as promoting transit and ride share programs and utilizing energy efficient equipment and systems.

Estimated operational emissions resulting from Alternative A after the implementation of BMPs listed in **Section 2.3.2** are shown in **Table 4.4-2**. CalEEMod input and output files are included as **Appendix I**.

Because the Strawberry Fields Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative A. As shown in **Table 4.4-2**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted

and the Proposed Project would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative A would result in a less-than-significant adverse effect associated with the regional air quality environment.

TABLE 4.4-2
ALTERNATIVE A OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.24	0.00	0.06	0.00	0.00	0.00
Mobile	3.71	32.79	43.99	0.22	15.87	4.38
Stationary	0.08	0.35	0.74	0.00	0.06	0.06
Total Emissions	6.03	33.14	44.79	0.22	15.93	4.44
<i>De Minimis</i> Levels	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level?	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016 (Appendix I).						

As shown in **Table 4.4-2**, emissions of individual criteria pollutants from stationary sources would exceed the Tribal NSR threshold of two tpy for ROG; therefore, a Tribal NSR permit would be required. The Tribe would apply for and obtain a minor NSR permit in accordance with the USEPA guidelines and Tribal NSR regulations.

CO Hot Spots Analysis

A CO Hot Spots Screening Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Implementation of Alternative A, after mitigation would result in the intersection of South Bonnyview Road and Bechilli Lane operating at an LOS D during Friday and Saturday peak hours.

Table 4.4-3 shows the results of the CO Hot Spots Screening Analysis; CO Hot Spots screening calculations are shown in **Appendix I**.

TABLE 4.4-3
SUMMARY OF LOCALIZED CO ANALYSIS AT SOUTH BONNYVIEW ROAD
AND BECHILLI LANE (1 AND 8-HOUR) – ALTERNATIVE A

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.44	3.21	2.18
25 Feet	3.03	2.89	1.89
50 Feet	2.89	2.78	1.79
100 Feet	2.75	2.67	1.69
CO NAAQS	9	9	35

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Sources: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

As shown in **Table 4.4-3**, CO concentrations at the intersection of Bonnyview Road and Bechelli Lane do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

4.4.3 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Construction Emissions

Construction of Alternative B would be similar to Alternative A. Construction is anticipated to begin in July 2019 and last approximately 18 months. Construction is assumed to occur 8-hours a day, 5 days a week. Construction emission totals for Alternative B, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-4**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-4
ALTERNATIVE B CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019						
Alt B at Strawberry Fields Site	0.16	2.19	2.17	0.004	0.44	0.21
Off-site Access Improvements	0.04	0.40	0.26	0.001	0.03	0.01
<i>Sub-total</i>	<i>0.20</i>	<i>2.59</i>	<i>2.43</i>	<i>0.005</i>	<i>0.47</i>	<i>0.22</i>
2020						
Alt B at Strawberry Fields Site	3.49	2.05	5.58	0.02	0.66	0.21
Off-site Access Improvements	0.16	0.69	0.94	0.02	0.04	0.04
<i>Sub-total</i>	<i>3.65</i>	<i>2.74</i>	<i>6.52</i>	<i>0.04</i>	<i>0.70</i>	<i>0.25</i>
Maximum Year Emissions	3.65	2.74	6.52	0.04	0.70	0.25
<i>De Minimis</i> Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016 (Appendix I).						

The Strawberry Fields Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative B construction. As shown in **Table 4.4-4**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative B would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

With incorporation of BMPs, construction of Alternative B would not result in significant adverse effects associated with the regional air quality environment.

Operational Vehicle and Area Emissions

Operation of Alternative B would be similar to Alternative A. Estimated operational emissions resulting from Alternative B after the implementation of BMPs listed in **Section 2.3.2** are shown in **Table 4.4-5**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-5
ALTERNATIVE B OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	1.94	0.00	0.05	0.00	0.00	0.00
Mobile	3.22	28.57	42.91	0.22	16.39	4.52
Stationary	0.04	0.19	0.11	0.00	0.01	0.01
Total Emissions	5.20	28.76	43.07	0.22	16.40	4.53
<i>De Minimis</i> Levels	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level?	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

Because the Strawberry Fields Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative B. As shown in **Table 4.4-5**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative B would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative B would result in a less-than-significant adverse effect associated with the regional air quality environment.

As shown in **Table 4.4-5**, emissions of individual criteria pollutants from stationary sources (area) would not exceed the Tribal NSR threshold of two tpy; therefore, a Tribal NSR permit would not be required.

CO Hot Spots Analysis

No CO Hot Spots Screening Analysis was performed because no intersection under Alternative B would degrade from LOS A, B, or C to LOS D, E, or F.

4.4.4 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Construction Emissions

Construction of Alternative C would be similar in scope to Alternative A with a smaller casino land use. Construction is anticipated to begin in July 2019 and last approximately 14 months. Construction is assumed to occur 8-hours a day, 5 days a week. Construction emission totals for Alternative C, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-6**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-6
ALTERNATIVE C CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019						
Alt C at Strawberry Fields Site	0.16	2.19	2.16	0.00	0.46	0.21
Off-site Access Improvements	0.04	0.40	0.26	0.00	0.03	0.01
<i>Sub-total</i>	<i>0.20</i>	<i>2.59</i>	<i>2.42</i>	<i>0.00</i>	<i>0.49</i>	<i>0.22</i>
2020						
Alt C at Strawberry Fields Site	3.39	5.03	5.45	0.02	0.62	0.20
Off-site Access Improvements	0.16	0.69	0.94	0.02	0.04	0.04
<i>Sub-total</i>	<i>3.55</i>	<i>5.72</i>	<i>6.39</i>	<i>0.04</i>	<i>0.66</i>	<i>0.24</i>
Maximum Year Emissions	3.55	5.72	6.39	0.04	0.66	0.24
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016 (Appendix I).						

The Strawberry Fields Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative C construction. As shown in **Table 4.4-6**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative C would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

With incorporation of BMPs, construction of Alternative C would not result in significant adverse effects associated with the regional air quality environment.

Operational Vehicle and Area Emissions

Operation of Alternative C would be similar in scope to Alternative A with a smaller casino land use. Estimated operation emissions resulting from Alternative C after the implementation of BMPs listed in **Section 2.3.2** are shown in **Table 4.4-7**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-7
ALTERNATIVE C OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.49	0.00	0.06	0.00	0.00	0.00
Mobile	3.12	27.60	39.10	0.20	14.51	4.01
Stationary	0.05	0.24	0.31	0.00	0.02	0.02
Total Emissions	5.66	27.84	39.47	0.20	14.53	4.03
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

Because the Strawberry Fields Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative C. As shown in **Table 4.4-7**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative C would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative C would result in a less-than-significant adverse effect associated with the regional air quality environment.

As shown in **Table 4.4-7**, emissions of individual criteria pollutants from stationary sources (area) would not exceed the Tribal NSR threshold of two tpy; therefore, an associated minor new source permit would not likely be required.

CO Hot Spots Analysis

A CO Hot Spots Screening Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Implementation of Alternative A, after mitigation would result in the intersection of South Bonnyview Road and Bechelli Lane and South Bonnyview Road and Interstate 5 (I-5) southbound (SB) and northbound (NB) ramps operating at an LOS D during Friday and Saturday peak hours. **Table 4.4-8** shows the results of the CO Hot Spots Screening Analysis, CO Hot Spots Screening calculations are shown in **Appendix I**.

TABLE 4.4-8
SUMMARY OF LOCALIZED CO ANALYSIS (1 AND 8-HOUR) – ALTERNATIVE C

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.41	3.18	2.16
25 Feet	3.01	2.87	1.88
50 Feet	2.87	2.76	1.78
100 Feet	2.74	2.66	1.69
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Sources: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

As shown in **Table 4.4-8** CO concentrations at the intersection of South Bonnyview Road and Bechelli Lane and South Bonnyview Road and I-5 SB and NB ramps do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

4.4.5 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Construction Emissions

Construction of Alternative D would be similar to Alternative C; however, Alternative C has a slightly different footprint than Alternative D. Construction emission totals for Alternative D, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-9**. CalEEMod input and output files are included as **Appendix I**.

The Strawberry Fields Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative D construction. As shown in **Table 4.4-9**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative D would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

With BMPs incorporated, construction of Alternative D would not result in significant adverse effects associated with the regional air quality environment.

TABLE 4.4-9
ALTERNATIVE D CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019						
Alt D at Strawberry Fields Site	0.12	1.70	1.79	0.004	0.27	0.11
Off-site Access Improvements	0.04	0.40	0.26	0.001	0.03	0.01
<i>Sub-total</i>	<i>0.16</i>	<i>2.10</i>	<i>2.05</i>	<i>0.005</i>	<i>0.30</i>	<i>0.12</i>
2020						
Alt D at Strawberry Fields Site	2.37	1.98	2.35	0.005	0.15	0.05
Off-site Access Improvements	0.16	0.69	0.94	0.02	0.04	0.04
<i>Sub-total</i>	<i>2.53</i>	<i>2.67</i>	<i>3.29</i>	<i>0.025</i>	<i>0.19</i>	<i>.09</i>
Maximum Year Emissions	2.53	2.67	3.29	0.025	0.30	0.12
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016 (Appendix I).						

Operational Vehicle and Area Emissions

Buildout of Alternative D would result in the generation of mobile CAPs, GHG, and HAP emissions from patron, employee, and delivery vehicles, as well as area and energy CAPs, GHG, and HAP emissions from combustion of natural gas in boilers, stoves, heating units, and other equipment on site. Estimated operation emissions resulting from Alternative D after the implementation of BMPs listed in **Section 2.3.2** are shown in **Table 4.4-1**. Detailed calculations of vehicle and area emissions are included as **Appendix I**.

Because the Strawberry Fields Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative D. As shown in **Table 4.4-10**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative D would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative D would result in a less-than-significant adverse effect associated with the regional air quality environment.

TABLE 4.4-10
ALTERNATIVE D OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	1.45	0.00	0.00	0.00	0.00	0.00
Mobile	1.60	14.20	18.66	0.09	6.66	1.84
Stationary	0.04	0.18	0.28	0.00	0.02	0.02
Total Emissions	3.09	14.38	18.94	0.09	6.68	1.86
<i>De Minimis</i> Level	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

As shown in **Table 4.4-10**, emissions of individual criteria pollutants from stationary sources (area) would not exceed the Tribal NSR threshold of two tpy; therefore, an associated minor new source permit would not likely be required.

CO Hot Spots Analysis

No CO Hot Spots Screening Analysis was performed because no intersection under Alternative D would degrade from LOS A, B, or C to LOS D, E, or F.

4.4.6 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Construction Emissions

Construction of Alternative E would be similar in scope to Alternative A. Due to the proximity of the Anderson Site to nearby sensitive receptors, construction emissions of fugitive dust and DPM have the potential to result in adverse effects associated with odor and health risk. To reduce project-related construction fugitive dust and DPM emissions, BMPs are provided in **Section 2.3.2**. BMPs provided in **Section 2.3.2** would reduce DPM emissions from construction equipment by approximately 70 percent, avoiding potentially adverse effects to nearby sensitive receptors. Construction emission totals for Alternative E, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-11**. CalEEMod input and output files are included as **Appendix I**.

The Anderson Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative E construction. As shown in **Table 4.4-11**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative E would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

TABLE 4.4-11
ALTERNATIVE E CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019	0.16	2.22	2.19	0.004	0.47	0.25
2020	4.37	5.37	5.83	0.02	0.71	0.22
Maximum Year Emissions	4.37	5.37	5.83	0.02	0.71	0.25
<i>De Minimis</i> Level	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level	N/A	N/A	N/A	N/A	N/A	N/A
Source: CalEEMod, 2016; (Appendix I).						

With BMPs incorporated, construction of Alternative E would not result in significant adverse effects associated with the regional air quality environment.

Operational Vehicle and Area Emissions

Development of Alternative E would be similar to Alternative A. Estimated operation emissions resulting from Alternative E are shown in **Table 4.4-12** after the implementation of BMPs listed in **Section 2.3.2**. Detailed calculations of vehicle and area emissions are included as **Appendix I**.

TABLE 4.4-12
ALTERNATIVE E OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.49	0.00	0.06	0.00	0.00	0.00
Mobile	4.12	36.48	52.67	0.26	19.74	5.45
Stationary	0.08	0.35	0.74	0.00	0.06	0.06
Total Emissions	6.69	36.83	53.47	0.26	19.80	5.51
<i>De Minimis</i> Level	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

Because the Anderson Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative E. As shown in **Table 4.4-12**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative E would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative E would result in a less-than-significant adverse effect associated with the regional air quality environment.

As shown in **Table 4.4-12**, emissions of individual criteria pollutants from stationary sources (area) would not exceed the Tribal NSR threshold of two tpy; therefore, an associated minor NSR permit would not likely be required.

CO Hot Spots Analysis

No CO Hot Spots Screening Analysis was performed because no intersection under Alternative E would degrade from LOS A, B, or C to LOS D, E, or F.

4.4.7 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Construction Emissions

Construction of Alternative F would emit PM₁₀, NO_x, SO₂, CO, ROG, GHGs, and HAPs from the operation of construction equipment and grading activities. Construction is anticipated to begin in July 2019 and last approximately 9 months. Construction is assumed to occur 8 hours a day, 5 days a week. Due to the proximity of the Win-River Casino Site to nearby sensitive receptors, construction emissions of fugitive dust and DPM have the potential to result in adverse effects associated with odor and health risk. This is a potentially significant impact. To reduce project-related construction fugitive dust and DPM emissions, BMPs are provided in **Section 2.3.2**. BMPs provided in **Section 2.3.2** would reduce DPM emissions from construction equipment by approximately 85 percent, avoiding potentially adverse effects to nearby sensitive receptors. Construction emission totals for Alternative F, assuming the implementation of BMPs listed in **Section 2.3.2**, are shown in **Table 4.4-13**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-13
ALTERNATIVE F CONSTRUCTION EMISSIONS

Construction Year	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
2019	0.32	2.21	2.63	0.01	0.24	0.09
2020	0.17	0.64	0.79	0.002	0.06	0.02
Maximum Year Emissions	0.32	2.21	2.63	0.01	0.24	0.09
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

The Win-River Casino Site is in a region of attainment for all criteria pollutants. Under the CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative F construction. As shown in **Table 4.4-13**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative F would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

With the incorporation of BMPs, construction of Alternative F would not result in significant adverse effects associated with the regional air quality environment.

Operational Vehicle and Area Emissions

Buildout of Alternative F would result in the generation of mobile CAPs, GHG, and HAP emissions from patron, employee, and delivery vehicles, as well as area CAPs, GHG, and HAP emissions from operation of the expanded casino and event center. The Tribe will implement a number of operational BMPs as listed in Section 2.3.2 that will reduce emissions resulting from the project, such as promoting transit and ride share programs and utilizing energy efficient equipment and systems. Estimated operational emissions resulting from Alternative F after the implementation of BMPs listed in **Section 2.3.2** are shown in **Table 4.4-14**. CalEEMod input and output files are included as **Appendix I**.

TABLE 4.4-14
ALTERNATIVE F OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	0.14	0.00	0.02	0.00	0.00	0.00
Mobile	0.54	4.74	5.09	0.02	1.58	0.44
Total Emissions	0.68	4.74	5.11	0.02	1.58	0.44
<i>De Minimis</i> Levels	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Level?	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; <i>de minimis</i> levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; (Appendix I).						

Because the Win-River Casino Site is in a region of attainment for all criteria pollutants, under the CAA 40 CFR Part 93, there are no *de minimis* levels or “thresholds” for a project’s emissions. Therefore, no conformity determination is required for Alternative F. As shown in **Table 4.4-14**, no criteria pollutant is emitted in a quantity greater than the PSD threshold of 250 tpy; therefore, no BACT analysis is warranted and Alternative F would not impact air quality within the Lassen Volcanic National Park which is designated as a Federal Class I area.

For the reasons described above, Alternative F would result in a less-than-significant adverse effect associated with the regional air quality environment.

As shown in **Table 4.4-14**, emissions of individual criteria pollutants from stationary sources (area and mobile in the above table) would exceed the Tribal NSR threshold of two tpy for ROG; therefore, an associated minor new source permit may be required.

CO Hot Spots Analysis

No CO Hot Spots Screening Analysis was performed because no intersection under Alternative F would degrade from LOS A, B, or C to LOS D, E, or F.

4.4.8 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, neither the Strawberry Fields Site nor the Anderson Site would be taken into trust. No development would occur in the near future on the Strawberry Fields or Anderson Sites, and no expansion would occur on the Win-River Casino Site. No construction or operational mobile or stationary criteria pollutants or DPM emissions would be generated under this Alternative.

4.5 BIOLOGICAL RESOURCES

This section identifies the direct effects to biological resources that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.5**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for impacts identified in this section are presented in **Section 5.5**.

The purpose of this section is to analyze the potential environmental consequences of project alternatives on biological resources, including wildlife, habitats, special-status species, migratory birds, wetlands, and Waters of the U.S. The analysis of potential effects was based on the biological setting as determined by field surveys conducted by Analytical Environmental Services (AES) in 2016, the area of impact for each Alternative, consultation with United States Fish and Wildlife Service (USFWS; **Appendix D-1**), National Marine Fisheries Service (NMFS; **Appendix D-2**), and United States Army Corps of Engineers (USACE), and a review of known literature and data.

4.5.1 ALTERNATIVE A – PROPOSED PROJECT

Potential Effects to Habitats

Development at the Strawberry Fields Site

Approximately 37 acres of non-native annual grassland would be directly impacted by the development of a casino-resort, retail facilities, parking areas, and related infrastructure under Alternative A. An additional 46 acres consisting of non-native annual grassland and small areas of valley foothill riparian and valley oak woodland habitat would be impacted by the development of water supply and wastewater facilities if Option 2 for Water Supply and Wastewater is implemented. The remaining habitat areas of the site (195 acres under Option 1 for Water Supply and Wastewater and 148 acres under Option 2 for Water Supply and Wastewater) would be avoided through project design and remain in undeveloped open space. Although the grassland habitats and valley foothill riverine habitats within the Strawberry Fields Site may be suitable for several federal and state special-status species, they are not, in and of themselves, listed as critical or sensitive under federal designation. Wildlife movement would not be restricted, as the majority of the Strawberry Fields Site will remain undeveloped.

As identified in **Section 3.5**, the USFWS designated critical habitat for steelhead (Northern California Distinct Population Segment) and Chinook salmon (Central Valley Spring-Run and Winter-Run occurs in the Sacramento River adjacent to the Strawberry Fields Site, and in the riverine habitat on site) (USFWS, 2017b). The Sacramento River is also designated essential fish habitat (EFH) for Chinook salmon and is protected under the Magnuson-Stevens Fishery Conservation and Management Act (MSMA). Designated critical habitat and EFH does not occur within the area of impact, and adjacent critical habitat and EFH will not be impacted. Additionally, a Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) would be implemented to further reduce potential runoff impacts to

critical habitat (**Section 5.2**). Therefore, impacts to wildlife habitat resulting from development of the Casino are less than significant and no mitigation is required.

Off-site Access Improvements

Access to the Strawberry Fields Site would be provided by either the North Access alone or a combination of the North Access and South Access. These Off-site Access Improvement Areas would not be taken into federal trust. Biological data and special-status species lists reviewed for the Strawberry Fields Site also apply to both Off-site Access Improvement Areas. Areas within the proposed North and South Access include paved roadways, disturbed road shoulders, parking areas, sidewalks, structural developments, and undeveloped or grazing land. Although habitats within the Access Improvement Areas may be suitable for several federal and State special-status species with the potential to occur in nonnative annual grassland habitat, they are not, in and of themselves, listed as critical or sensitive under federal designation. Wildlife movement would not be further restricted. Designated critical habitat and EFH does not occur within the area of impact, and adjacent critical habitat and EFH will not be impacted. Additionally, a SWPPP and BMPs would be implemented to further reduce potential runoff impacts to critical habitat (**Section 5.2**). Therefore, impacts to wildlife habitat resulting from development of the Access Improvement Areas are less than significant and no mitigation is required.

Potential Effects to Special-Status Species

Development at the Strawberry Fields Site

Federally-Listed or Protected Special-Status Species

As discussed in **Section 3.5.2**, the Strawberry Fields Site may provide habitat for seven federally-listed or protected species: Valley Elderberry Longhorn Beetle (VELB), California red-legged frog (CRLF), bald eagle, and four fish species. Bald eagles are federally protected under the Bald and Golden Eagle Protection Act. These species are discussed below.

Valley Elderberry Longhorn Beetle

A VELB protocol-level survey in 2007 recorded 13 elderberry shrubs with VELB exit holes within the Strawberry Fields Site (**Appendix D-3**). During the 2016 and 2017 surveys, only one elderberry shrub was observed within the Strawberry Fields Site, and elderberry shrubs observed in 2007 surveys were no longer present. The singular elderberry shrub was located in the northwestern portion of the site along the Sacramento River, approximately 100 feet from the area of impact, but did not contain indicators of VELB presence at the time of survey (**Figure 3.5-1**). Although unlikely, if VELB were to be present at the time of construction of the Proposed Project, nearby construction-related activities have the potential to cause VELB mortality. VELB mortality would be a potentially significant adverse environmental effect of Alternative A. Potential adverse effects to VELB and its host plant would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.1**, which include avoidance and worker awareness training. A Biological Assessment, with a

finding of “may affect but is not likely to adversely affect” VELB was sent by the BIA to USFWS for consultation and is provided in **Appendix D-1**.

California Red-legged Frog

CRLF has a low potential to occur within the Strawberry Fields Site. The Strawberry Fields Site is located within the northernmost extent of the historical range of CRLF but is outside its currently known range. The nearest recorded occurrence of CRLF to the Strawberry Fields Site is approximately 33 miles southwest. Surveys did not detect CRLF or indicators of CRLF on site. Surveys did detect the presence of bullfrogs in the pond features (NSR, 2007). Bullfrogs are known predators of CRLF, thus CRLF are not usually found in habitats containing bullfrogs (USFWS, 2002).

Potential CRLF upland habitat may occur in the non-native annual grassland habitat of the Strawberry Fields Site. Although unlikely, if CRLF were to be present at the time of construction of the Proposed Project, construction-related activities have the potential to cause frog mortality. Frog mortality would be a potentially significant adverse environmental effect of Alternative A. Potential adverse effects to CRLF would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.1**, which include a preconstruction survey, silt fencing, and worker awareness training. A Biological Assessment, with a finding of “may affect but is not likely to adversely affect” CRLF was sent to USFWS for consultation in accordance with Section 7 of the Federal Endangered Species Act (FESA) and is provided in **Appendix D-1**.

Bald Eagle

Suitable nesting habitat is absent; however, potential foraging areas occur throughout the site. Although unlikely, if eagles were to be present at the time of construction of the Proposed Project, construction-related activities have the potential to cause eagle disturbance or mortality. Eagle mortality would be a potentially significant adverse environmental effect of Alternative A. Potential adverse effects to eagles would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.1**, which include a preconstruction survey and avoidance buffers.

Special-Status Fish Species

Federally-listed Steelhead, Chinook salmon (Sacramento River Winter-Run and Central Valley spring-run evolutionary significant units), and green sturgeon (southern distinct population segment) have the potential to occur within the 2.15 acres of on-site riverine habitat and the adjacent Sacramento River, which are designated as critical habitat for the species. The Sacramento River and riverine habitat are also designated by NMFS as EFH for Chinook salmon. The riverine habitat contains a seasonal backwater of the Sacramento River and a portion of the floodplain. The backwater of the riverine habitat may seasonally provide suitable juvenile rearing habitat for various aquatic species, however, does not generally contain the primary constituent elements associated with other life stage usages (i.e. no spawning flows or gravel). Similarly, the floodplain habitat is a depositional area that only inundates

during periods of high water. The main channel of the Sacramento River adjacent to the Action Area contains habitat for all life stages of fish species.

Construction activity associated with the Proposed Action would not directly impact the on-site riverine habitat, aquatic habitats, adjacent Sacramento River, and thus associated special-status fish species, critical habitat, and EFH. Although construction activities would not directly impact the Sacramento River, water quality in the Sacramento River has the potential to be indirectly impacted by construction activities and associated erosion and sedimentation (please refer to **Sections 2.3.2, 3.3, and 4.3** regarding proposed streambank stabilization measures). This is a potentially significant impact. Compliance with a National Pollutant Discharge Elimination System (NPDES) General Construction permit and implementation of a SWPPP and BMPs (**Section 5.2**) will reduce potential runoff effects that could indirectly impact the on-site riverine habitat, aquatic features, or the adjacent Sacramento River, and associated special-status species. Therefore, Alternative A would have a less-than-significant impact on special-status fish species and associated habitat in the Sacramento River. Additionally, the stormwater plan for Alternative A includes Low Impact Development (LID) features that would filter pollutants from stormwater run-off during operation of the project. Impacts to surface water quality are discussed in more detail in **Section 4.3.1**. As stated therein, with the implementation of LID measures incorporated into the project design, impacts to water quality in the Sacramento River would be less than significant.

State-Listed Special-Status Species

Special-status species that are formally listed by the state and/or recognized by state agencies, California Native Plant Society (CNPS), or other local jurisdictions because of their rarity or vulnerability to habitat loss or population decline generally receive no specific protection on tribal lands taken into trust by the federal government. Because the Strawberry Fields Site is not currently federal trust land, and because the off-site access improvements would occur on non-federal land, potential impacts to state-listed species are discussed below and mitigation to reduce potential effects to state-listed species is recommended in **Section 5.5**.

As discussed in **Section 3.5.2**, the Strawberry Fields Site may provide habitat for 11 state-listed or protected species. Based on the proposed development area for Alternative A, only seven of these species have the potential to be impacted. Potentially impacted state special-status species include Red Bluff dwarf rush, bald eagle, tricolored blackbird, bank swallow, western spadefoot toad, foothill yellow-legged frog (FYLF), and CRLF. Special-status species that would not be impacted due to avoidance of suitable habitat, such as the riverine areas and ponds, include silky cryptantha and western pond turtle. Potential adverse effects to species would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.1, 5.5.2, and 5.5.3**, which include preconstruction surveys, avoidance buffers, and silt fencing.

Off-site Access Improvements

Construction of the off-site access improvements has the potential to adversely affect two special-status species. The Off-site Access Improvement Areas may provide poor to marginal foraging habitat for the bald eagle (*Haliaeetus leucocephalus*) and tricolored blackbird (*Agelaius tricolor*); however, suitable nesting habitat is absent. Potential adverse effects to special-status species would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5**, which include a preconstruction survey and avoidance buffers.

Potential Effects to Migratory Birds and Other Birds of Prey

Construction Activities

Migratory birds and their nests are protected from “take” by the Migratory Bird Treaty Act (MBTA; 16 United States Code [USC] 703-711), which makes it unlawful to “pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess or any part, nest, or egg of any such bird” (50 Code of Federal Regulations [CFR] 10). Alternative A could adversely affect active migratory bird nests if vegetation removal or loud noise-producing activities associated with construction were to occur during the nesting season (February 15 through September 15). Potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.2**, which include a preconstruction survey and avoidance buffers.

Lighting

Increased lighting could increase bird collisions with structures, and could also cause disorientation effects for avian species. Thus, nighttime lighting from the operation of the casino could have a potentially significant effect on both migrating and local bird populations. With the incorporation of design features in **Section 2.3.2**, including the use of non-reflective glass and downcast lighting, potential adverse effects to migratory birds and other birds of prey would be less than significant.

Potential Effects to Wetlands and Waters of the U.S.

Development at the Strawberry Fields Site

A preliminary jurisdictional determination was made by the USACE (SPK-2007-00821) regarding the aquatic features on the Strawberry Fields Site (**Figure 3.5-1**). The project design of the casino avoids wetlands and Waters of the U.S. Rip-rap will be implemented for erosion control purposes along the Sacramento River to limit soil loss and sedimentation. Boulders will be installed above the ordinary high water mark and approximately 2 feet of earth grading will occur to accommodate the rocking. Although construction activities would not directly impact Waters of the U.S., these features have the potential to be indirectly impacted by construction activities and associated erosion and sedimentation. This is a potentially significant impact. Indirect construction impacts to the Sacramento River and the wetland in the northeastern corner of the Strawberry Fields Site would be reduced to less-than-significant levels with

implementation of the mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include consultation with the USACE and United States Environmental Protection Agency (USEPA) regarding the need to obtain permits under Section 404 and 401 of the Clean Water Act (CWA), implementation of a SWPPP, silt fencing, and avoidance buffers.

Off-site Access Improvements

No wetlands or Waters of the U.S. were observed in the Off-site Access Improvement Areas. A man-made water transport canal that carries water from the Sacramento River intersects the northern portion of the North Access Improvement Area. The canal currently passes beneath the existing northern access road to the site and continues below Interstate 5 (I-5) via a culvert. The canal is controlled by the Anderson-Cottonwood Irrigation District (ACID) under a pre-1914 water right. Man-made features are generally not considered Waters of the U.S. unless built in place of a historic natural water-carrying drainage or feature. The canal was built from surrounding uplands and was not historically part of a natural jurisdictional feature. Thus, the canal is considered non-jurisdictional by the USACE (Roberts, 2017). Because construction of the North Access Improvements would require widening of the existing crossing over the canal, consultation with ACID would occur prior to construction. Implementation of the Off-site Access Improvement Areas would have a less-than-significant impact on wetlands and Waters of the U.S., and no mitigation is required.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to alternative tribal uses. Because no exterior improvements or construction activities would occur, no impacts to biological resources would occur.

4.5.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Potential Effects to Habitats

Development at the Strawberry Fields Site

Approximately 27 acres of non-native annual grassland would be directly impacted by the development of a casino-resort, parking areas and related infrastructure under Alternative B. An additional 37 acres consisting of non-native annual grassland and small areas of valley foothill riparian and valley oak woodland habitat would be impacted by the development of water supply and wastewater facilities if Option 2 for Water Supply and Wastewater is implemented. The remaining habitat areas of the site (205 acres under Option 1 for Water Supply and Wastewater and 168 acres under Option 2 for Water Supply and Wastewater) would be avoided through project design and remain in undeveloped open space. Although the grassland, valley foothill riverine, and valley oak woodland habitats within the Strawberry Fields Site may be suitable for several federal and state special-status species, they are not, in and of themselves, listed as critical or sensitive under federal designation. Wildlife movement would not be

restricted, as the majority of the Strawberry Fields Site will remain undeveloped. Designated critical habitat and EFH does not occur within the area of impact, and adjacent critical habitat and EFH will not be impacted. Additionally, a SWPPP and BMPs would be implemented to further reduce potential runoff impacts to critical habitat (**Section 5.2**). Therefore, impacts to wildlife habitat resulting from the Proposed Project are less than significant and no mitigation is required.

Off-site Access Improvements

Impacts to habitats resulting from the construction of off-site access improvements would be identical to those described under Alternative A. Refer to **Section 4.5.1**.

Potential Effects to Special-Status Species

Alternative B has the potential to adversely affect the same special-status species as discussed under Alternative A. Mitigation to reduce potential effects on special-status species to less-than-significant levels is discussed in **Section 5.5**, which include preconstruction surveys, silt fencing, and avoidance buffers.

Potential Effects to Migratory Birds and Other Birds of Prey

Alternative B has the potential to impact migratory birds and their nests as discussed under Alternative A. With implementation of the design features in **Section 2.3.2**, which include the use of non-reflective glass, downcast lighting, preconstruction surveys, and avoidance buffers, and mitigation measures identified in **Section 5.5.2** potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels.

Potential Effects to Wetlands and Waters of the U.S.

Similar to Alternative A, project design of Alternative B avoids wetlands and Waters of the U.S. Indirect construction impacts to the wetland in the northeastern corner of the Strawberry Fields Site would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP, silt fencing, and avoidance buffers.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative B, the existing Win-River Casino would be converted to alternative tribal uses. Because no exterior improvements or construction activities would occur, no impacts to biological resources would occur.

4.5.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Potential Effects to Habitats

Development at the Strawberry Fields Site

Approximately 37 acres of non-native annual grassland would be directly impacted by development in Alternative C. An additional 43 acres consisting of non-native annual grassland and small areas of valley foothill riparian and valley oak woodland habitat would be impacted by the development of water supply and wastewater facilities if Option 2 for Water Supply and Wastewater is implemented. The remaining habitat areas of the site (195 acres under Option 1 for Water Supply and Wastewater and 152 acres under Option 2 for Water Supply and Wastewater) would be avoided through project design and remain in undeveloped open space. Although the grassland, valley foothill riverine, and valley oak woodland habitats within the Strawberry Fields Site may be suitable for several federal and state special-status species, they are not, in and of themselves, listed as critical or sensitive under federal designation. Wildlife movement would not be restricted, as the majority of the Strawberry Fields Site will remain undeveloped. Designated critical habitat and EFH does not occur within the area of impact, and adjacent critical habitat and EFH will not be impacted. Additionally, a SWPPP and BMPs would be implemented to further reduce potential runoff impacts to critical habitat (**Section 5.2**). Therefore, impacts to wildlife habitat are less than significant and no mitigation is required.

Off-site Access Improvements

Impacts to habitats resulting from the construction of off-site access improvements would be identical to those described under Alternative A. Refer to **Section 4.5.1**.

Potential Effects to Special-Status Species

Alternative C has the potential to adversely affect the same special-status species as discussed under Alternative A. Mitigation to reduce potential effects on special-status species to less-than-significant levels is discussed in **Section 5.5**, which include preconstruction surveys, silt fencing, and avoidance buffers.

Potential Effects to Migratory Birds and Other Birds of Prey

Alternative C has the potential to impact migratory birds and their nests as discussed under Alternative A. With implementation of the design features in **Section 2.3.2**, which include the use of non-reflective glass, downcast lighting, preconstruction surveys, and avoidance buffers, and mitigation measures identified in **Section 5.5.2** potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels.

Potential Effects to Wetlands and Waters of the U.S.

Similar to Alternative A, project design of Alternative C avoids wetlands and Waters of the U.S. Indirect construction impacts to the wetland in the northeastern corner of the Strawberry Fields Site would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP, silt fencing, and avoidance buffers.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative C, the existing Win-River Casino would be converted to alternative tribal uses. Because no exterior improvements or construction activities would occur, no impacts to biological resources would occur.

4.5.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Potential Effects to Habitats

Development at the Strawberry Fields Site

Approximately 19 acres of non-native annual grassland would be directly impacted by retail development in Alternative D. An additional 17 acres consisting of non-native annual grassland and small areas of valley foothill riparian and valley oak woodland habitat would be impacted by the development of water supply and wastewater facilities if Option 2 for Water Supply and Wastewater is implemented. The remaining habitat areas of the site (213 acres under Option 1 for Water Supply and Wastewater and 195 acres under Option 2 for Water Supply and Wastewater) would be avoided through project design and remain in undeveloped open space. Although the grassland, valley foothill riverine, and valley oak woodland habitats within the Strawberry Fields Site may be suitable for several federal and state special-status species, they are not, in and of themselves, listed as critical or sensitive under federal designation. Wildlife movement would not be restricted, as the majority of the Strawberry Fields Site will remain undeveloped. Designated critical habitat and EFH does not occur within the area of impact, and adjacent critical habitat and EFH will not be impacted. Additionally, a SWPPP and BMPs would be implemented to further reduce potential runoff impacts to critical habitat (**Section 5.2**). Therefore, impacts to wildlife habitat are less than significant and no mitigation is required.

Off-site Access Improvements

Impacts to habitats resulting from the construction of off-site access improvements would be identical to those described under Alternative A. Refer to **Section 4.5.1**.

Potential Effects to Special-Status Species

Alternative D has the potential to adversely affect the same special-status species as discussed under Alternative A. Mitigation to reduce potential effects on special-status species to less-than-significant

levels is discussed in **Section 5.5**, which include preconstruction surveys, silt fencing, and avoidance buffers.

Potential Effects to Migratory Birds and Other Birds of Prey

Alternative D has the potential to impact migratory birds and their nests as discussed under Alternative A. With implementation of the design features in Section 2.3.2, which include the use of non-reflective glass, downcast lighting, preconstruction surveys, and avoidance buffers, and mitigation measures identified in Section 5.5.2 potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels.

Potential Effects to Wetlands and Waters of the U.S.

Similar to Alternative A, project design of Alternative D avoids wetlands and Waters of the U.S. Indirect construction impacts to the wetland in the northeastern corner of the Strawberry Fields Site would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP, silt fencing, and avoidance buffers.

4.5.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Potential Effects to Habitats

Approximately 25 acres of non-native annual grassland on the Anderson Site would be directly impacted by Alternative E. The remaining 30 acres of oak woodland and seasonal wetland would be graded for use as a material borrow area and stormwater infiltration and storage. Although the grassland and woodland habitats within the Anderson Site may be suitable for the federal and state special-status species discussed below, they are not, in and of themselves, listed as critical or sensitive under federal designation. Additionally, habitats on the Anderson Site are highly fragmented and disturbed by adjacent highway and development on all sides. Designated critical habitat or EFH does not occur within the area of impact or immediately adjacent to the Anderson Site. Therefore, impacts to wildlife habitat resulting from development of the Anderson Site are less than significant and no mitigation is required. Impacts relating to wetlands and wetland-dependent special-status species are discussed below.

Potential Effects to Special-Status Species

As discussed in **Section 3.5.4**, the Anderson Site may provide habitat for six special-status species. Based on the area of impact of Alternative E, potential effects could occur to: Red Bluff dwarf rush, CRLF, western spadefoot toad, tricolored blackbird, bald eagle, and western red bat. Potential adverse effects to special-status species would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5**, which include a preconstruction survey, silt fencing, and avoidance buffers.

Potential Effects to Migratory Birds and Other Birds of Prey

Alternative E has the potential to impact migratory birds and their nests as discussed under Alternative A. With implementation of the design features in **Section 2.3.2**, which include the use of non-reflective glass, downcast lighting, preconstruction surveys, and avoidance buffers, and mitigation measures identified in **Section 5.5.2** potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels.

Potential Effects to Wetlands and Waters of the U.S.

The Tormey Drain, seasonal wetland, and drainages occur on the southern portion of the site, discussed in **Section 3.5.4**. Approximately 2.68 acres of potential seasonal wetland will be graded for use as a material borrow area and stormwater infiltration and storage. Several drainages (approximately 1,522 linear feet) were identified with bed, bank, and channel running through the potential seasonal wetland. The drainages converge before connecting to the Tormey Drain, a local street drainage approximately 654 linear feet in length that bisects the site. The Tormey Drain originates in the west-central part of the Anderson Site and drains to the Sacramento River, and is also identified by the United States Geological Survey (USGS) as an unnamed blue-line stream. The Tormey Drain will be avoided by project design. Indirect impacts to the Tormey Drain and impacts to potential wetlands and Waters of the U.S. would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP and permitting.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative E, the existing Win-River Casino would be converted to alternative tribal uses. Because no exterior improvements or construction activities would occur, no impacts to biological resources would occur.

4.5.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Potential Effects to Habitats

Alternative F would impact approximately 5 acres of ruderal/developed habitat on the Win-River Casino Site. The ruderal/developed habitats on the Win-River Casino Site do not provide suitable habitat for special-status species, and are not, in and of themselves, listed as critical or sensitive under federal designation. Designated critical habitat and EFH does not occur within or adjacent to the area of impact. Therefore, impacts to wildlife habitat resulting from development of the Win-River Casino Site are less than significant and no mitigation is required.

Potential Effects to Special-Status Species

As discussed in **Section 3.5.5**, no special-status species have the potential to occur on the Win-River Casino Site. Therefore, there is no impact to special-status species resulting from development of the Win-River Casino Site and no mitigation is required.

Potential Effects to Migratory Birds and Other Birds of Prey

As discussed in Alternative A, migratory birds and their nests may be impacted by construction activities in Alternative F. Potential adverse effects to migratory birds and other birds of prey would be reduced to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5.2**, which include a preconstruction survey and avoidance buffers.

Potential Effects to Wetlands and Waters of the U.S.

No wetlands or Waters of the U.S. occur within Alternative F. Alternative F would have no impact on wetlands or Waters of the U.S.

4.5.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Existing biological resources would remain as-is in the near-term and habitats would not be disturbed under the No Action Alternative. Because these habitats would not be disturbed, it is assumed that all existing plant and animal species would continue to remain undisturbed and no impact to biological resources would result.

4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

This section assesses the significance of the direct effects to cultural resources that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.6**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for adverse effects identified in this section are presented in **Section 5.6**.

ASSESSMENT CRITERIA

A significant effect would occur if the implementation of a project alternative resulted in physical destruction, alteration, removal, neglect, or change in characteristics or reduction of integrity of historic features of a cultural resource. A significant effect to paleontological resources would occur if a project alternative directly or indirectly destroyed such a resource.

4.6.1 ALTERNATIVE A – PROPOSED PROJECT

Cultural Resources

Development at the Strawberry Fields Site

A prehistoric archaeological site is within the area proposed for development under Alternative A. As described in **Section 3.6**, cultural resources investigations of the Strawberry Fields Site (AES 2016a, 2016b; Crawford, 2007) recorded multiple surface and subsurface cultural manifestations which have been combined into a single site designated CA-SHA-4413. A Phase II testing and evaluation program (AES, 2016b) identified features and artifacts sufficient to make some general statements as to timeframe and activities at CA-SHA-4413, however the limited data potential and tribal consultation have resulted in a recommendation that site CA-SHA-4413 is not eligible for listing on the National Register of Historic Places (NRHP). Therefore, development of Alternative A within the Strawberry Fields Site would not result in direct adverse effects to known historic properties.

As currently understood, the archaeological site identified as CA-SHA-4413 is not eligible for listing on the NRHP. However, as-yet unknown aspects of CA-SHA-4413 may be uncovered during construction which would change the evaluation of the site's NRHP eligibility. The presence of one archaeological site also increases the potential for other buried resources to be uncovered during construction. This would be a potentially significant impact. As a result, mitigation measures are presented in **Section 5.6** for the treatment of archaeological discoveries made during construction. Implementation of the mitigation measures in **Section 5.6** would reduce any effects on as-yet unknown archaeological resources to less-than-significant levels.

Off-site Access Improvements

North Access to Strawberry Fields Site

A prehistoric archaeological site, CA-SHA-266, is within the North Access Improvement Area. As described in **Section 3.6**, cultural resources investigations of the North Access Improvement Area indicates that portions of CA-SHA-266 could be adversely effected by expansion of the intersection at South Bonnyview Road and Bechelli Lane, the widening of Bechelli Lane, and the development of appurtenant structures (e.g. sidewalks; AES, 2017).

When it can be reasonably anticipated that a project will adversely affect an NRHP-eligible or listed resource, Section 106 of the National Historic Preservation Act (NHPA) requires that the federal lead agency (Bureau of Indian Affairs; BIA) consult with the State Historic Preservation Office (SHPO) and other parties to negotiate and execute a Section 106 agreement document that sets out the measures the federal agency will implement to resolve those adverse effects. Mitigation measures are presented in **Section 5.6** for the treatment of these adverse effects. Implementation of the mitigation measures in **Section 5.6** would reduce any effects on CA-SHA-266 to less-than-significant levels.

South Access to Strawberry Fields Site

No cultural resources were observed during field surveys or uncovered by the background record search. Mitigation measures are presented in **Section 5.6** for the treatment of archaeological discoveries made during construction. Implementation of the mitigation measures in **Section 5.6** would reduce any effects on as-yet unknown archaeological resources to less-than-significant levels.

Paleontological Resources

No paleontological resources have been reported or observed on or in the vicinity of the Strawberry Fields Site. Therefore, construction of Alternative A would not result in significant adverse effects to known paleontological resources. There is a possibility that previously unknown paleontological resources would be discovered during earthmoving activities. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries which would ensure that Alternative A would not result in significant adverse effects to previously unknown paleontological resources under Section 101(b)(4) of the National Environmental Policy Act (NEPA; 40 Code of Federal Regulations [CFR] 1500-1508).

4.6.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Cultural Resources

Impacts from the development of Alternative B would be the same as Alternative A, as discussed above in **Section 4.6.1**, including potential adverse effects resulting from construction of the North Access. Mitigation measures for Alternative B presented in **Section 5.6** provide for the treatment of unanticipated cultural resources discovered during project-related construction, and would resolve the adverse effects to

CA-SHA-266 from the North Access Improvements. With the implementation of these mitigations measures, Alternative B would not result in significant adverse effects to previously unknown cultural resources or to CA-SHA-266.

Paleontological Resources

As with Alternative A, no paleontological resources have been reported or observed on or in the vicinity of the Strawberry Fields Site. Therefore, the development of Alternative B would not result in significant adverse effects to known paleontological resources. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries. Thus, with the implementation of this measure, Alternative B would have no effect on known paleontological resources under NEPA Section 101(b)(4) (40 CFR 1500-1508).

4.6.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Cultural Resources

Impacts from the development of Alternative C would be the same as Alternative A, as discussed above in **Section 4.6.1**, including potential adverse effects resulting from construction of the North Access. Mitigation measures for Alternative C presented in **Section 5.6** provide for the treatment of unanticipated cultural resources discovered during project-related construction, and would resolve the adverse effects to CA-SHA-266 from the North Access Improvements. With the implementation of these mitigations measures, Alternative C would not result in significant adverse effects to previously unknown cultural resources or to CA-SHA-266.

Paleontological Resources

As with Alternative A, no paleontological resources have been reported or observed on or in the vicinity of the Strawberry Fields Site. Therefore, the development of Alternative C would not result in significant adverse effects to known paleontological resources. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries. Thus, with the implementation of this measure, Alternative C would have no effect on known paleontological resources under NEPA Section 101(b)(4) (40 CFR 1500-1508).

4.6.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Cultural Resources

Impacts from the development of Alternative D would be the same as Alternative A, as discussed above in **Section 4.6.1**, including potential adverse effects resulting from construction of the North Access. Mitigation measures for Alternative D presented in **Section 5.6** provide for the treatment of unanticipated cultural resources discovered during project-related construction, and would resolve the adverse effects to CA-SHA-266 from the North Access Improvements. With the implementation of these mitigations

measures, Alternative D would not result in significant adverse effects to previously unknown cultural resources or to CA-SHA-266.

Paleontological Resources

As with Alternatives A, B, and C, no paleontological resources have been reported or observed on or in the vicinity of the Strawberry Fields Site. Therefore, Alternative D would not result in significant adverse effects to previously known paleontological resources. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries. Thus, with the implementation of this measure, Alternative D would not result in significant adverse effects to previously undocumented paleontological resources under NEPA Section 101(b)(4) (40 CFR 1500-1508).

4.6.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Cultural Resources

Background research, consultation, and field surveys failed to identify any cultural resources within the Anderson Site, and therefore construction of Alternative E would not result in significant adverse effects to known historic properties on the Anderson Site. Mitigation measures for Alternative E are the same as those presented in **Section 5.6** for Alternative A for the treatment of unanticipated cultural resources discovered during project-related construction. With the implementation of these mitigations measures, the construction of Alternative E would not result in significant adverse effects to previously unknown cultural resources.

Paleontological Resources

As with Alternatives A, B, C, and D, no paleontological resources have been reported or observed on or in the vicinity of the Anderson Site. Therefore, Alternative E would not result in significant adverse effects to previously known paleontological resources. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries. Thus, with the implementation of this measure, Alternative E would not result in significant adverse effects to previously undocumented paleontological resources under NEPA Section 101(b)(4) (40 CFR 1500-1508).

4.6.6 ALTERNATIVE F– EXPANSION OF EXISTING CASINO ALTERNATIVE

Cultural Resources

The current project design of Alternative F would not result in significant adverse effects to known historic properties on the Win-River Casino Site, as long as the burial site encountered during prior construction is avoided. Mitigation measures for Alternative F are the same as those presented in **Section 5.6** for Alternative A for the treatment of unanticipated cultural resources discovered during project-related construction. With the implementation of these mitigations measures, the construction of Alternative F would not result in significant adverse effects to previously unknown cultural resources.

Paleontological Resources

As with Alternatives A, B, C, D, and E, no paleontological resources have been reported or observed on or in the vicinity of the Win-River Casino Site. Therefore, Alternative F would not result in significant adverse effects to previously known paleontological resources. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated paleontological discoveries. Thus, with the implementation of this measure, Alternative F would not result in significant adverse effects to previously undocumented paleontological resources under NEPA Section 101(b)(4) (40 CFR 1500-1508).

4.6.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

The No Action Alternative and will not result in any significant adverse effects to cultural or paleontological resources in the near term.

4.7 SOCIOECONOMIC CONDITIONS

This section identifies the direct effects associated with socioeconomic conditions that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.7**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for adverse effects identified in this section, if warranted, are presented in **Section 5.0**.

Assessment Criteria

Socioeconomic Impacts

To determine the potential effects of the alternatives associated with socioeconomic conditions, the economic effects of temporary construction and ongoing operational activities of each alternative were evaluated. Because socioeconomic effects would be most pronounced in the vicinity of the Strawberry Fields, Anderson, and/or Win-River Casino Sites (depending on the alternative), the scope of analysis focuses on impacts to the alternative sites and surrounding areas within Shasta County (County). Impacts resulting from operation of an alternative would occur continuously after opening. An adverse economic, fiscal, or social impact would occur if the effect of the project were to negatively alter the ability of governments to perform at existing levels, or alter the ability of people to obtain public health and safety services. Much of the analysis presented herein relies on data presented in a report titled *Redding Rancheria Strawberry Fields EIS Economic Analysis*, prepared by Pro Forma Advisors, included as **Appendix A**. Economic effects in this analysis are based on the Impact Analysis for Planning (IMPLAN) model. All impacts discussed under Alternatives A, B, C, and E are described as a net change assuming the closure of the existing Win-River Casino; while Alternatives D, F, and G assume that the existing Win-River Casino would remain open, as described in **Section 2.0**.

Environmental Justice Impacts

To determine the impacts of the alternatives on environmental justice, the location and status of minority and low-income communities of concern, as identified in **Section 3.7**, are compared to the effect and nature of each alternative's impacts. An adverse environmental justice impact would result if any adverse impact within the scope of this document disproportionately affected an identified minority or low-income community or Native American tribe. The document *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* provides the following direction on how to analyze the impacts of actions on low-income and minority populations:

“Under National Environmental Policy Act (NEPA), the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an

effect should heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population” (USEPA, 1998).

The United States Environmental Protection Agency’s (USEPA’s) Office of Policy released a memorandum on February 23, 2018 reaffirming the USEPA’s environmental justice and community revitalization priorities. The priorities include:

“Achiev[ing] measurable environmental outcomes for underserved and overburdened communities in the areas of exposure to lead, access to safe drinking water, reduction of harmful air pollutants and limiting exposure to contamination from hazardous wastes” (USEPA, 2018).

Methodology and Terms

Expenditures on goods and services (calculated from estimated costs for construction; investment in furniture, fixtures and equipment; various business and consulting fees; and pre-opening expenses) for construction and operational activities would generate substantial direct economic output, as well as indirect and induced economic output. Output is defined as the total value of all goods and services produced at the establishment or construction site. Direct output would result from money spent on activities for construction and operational activities of the project alternatives. Indirect output would result from expenditures on goods and services by businesses that receive funds directly from the construction and operation of an alternative. Induced output would result from expenditures on goods and services by employees directly generated from construction and operation of an alternative. Indirect and induced output would be dispersed and distributed among a variety of different industries and businesses throughout the local economy.

4.7.1 ALTERNATIVE A – PROPOSED PROJECT

Economic Effects

Economic Output

Construction

The construction of Alternative A would result in economic output to the County and the State of California in the form of jobs, purchases of goods and services, and through positive fiscal effects. As shown in **Table 4.7-1**, construction of Alternative A is expected to generate a one-time total output of approximately \$270.6 million. This total economic output figure includes direct output as well as indirect and induced output, which would be distributed among a variety of different industries and businesses throughout the County. Output received by County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

TABLE 4.7-1
ONE-TIME SHASTA COUNTY CONSTRUCTION IMPACT (MILLIONS, 2017 DOLLARS)¹

Output	Alternative					
	A	B	C	D	E	F
Direct	\$175.4	\$142.6	\$165.5	\$63.4	\$197.9	\$37.1
Indirect and Induced	\$95.2	\$78.8	\$89.8	\$33.3	\$107.6	\$21.0
Total	\$270.6	\$221.4	\$255.4	\$96.7	\$305.5	\$58.2
Notes: All numbers are rounded to the nearest hundred thousand dollars. Numbers may not sum due to rounding. Source: Appendix A .						

Operation

Revenue and expenditures from the operation of Alternative A were estimated in **Appendix A**. Direct output from Alternative A in its first year of stabilized operation¹ (net the closure of the existing Win-River Casino) is estimated at \$50.4 million in revenue. Indirect and induced output is estimated at \$31.8 million. Overall, approximately \$82.2 million would be generated annually beginning in the first stabilized year of operations. **Table 4.7-2** details the estimated operational impact for the various alternatives. Similar to the construction of the Alternative A, operation of Alternative A would generate increased revenues for a variety of businesses in the County as a result of increased economic activities. Output received by County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact. No mitigation is required.

TABLE 4.7-2
ANNUAL SHASTA COUNTY OPERATIONAL ECONOMIC IMPACT (IN MILLIONS)¹

Output	Alternative					
	A	B	C	D	E	F
Direct	\$50.4	\$30.7	\$41.9	\$20.1	\$42.8	\$3.4
Indirect and Induced	\$31.8	\$20.0	\$26.2	\$12.0	\$26.9	\$2.2
Total	\$82.2	\$50.7	\$68.0	\$32.0	\$69.7	\$5.7
Notes: All numbers are rounded to the nearest hundred thousand dollars. Numbers may not sum due to rounding. 1 – Figures shown in 2017 dollars; these impacts would accrue in the first year of stabilized operations. Source: Appendix A .						

Substitution Effects

Potential substitution effects (the loss of customers at existing commercial businesses to the new business) of a tribal casino on existing gaming, restaurant, recreation, and retail establishments have been considered when evaluating the magnitude of the casino's impact on the economy. The magnitude of the substitution effect can generally be expected to vary greatly by specific location and according to a

¹ **Appendix A** assumes the first year of operations to be 2022, although the buildout year in this EIS is assumed to be 2025. The delay in buildout would not materially alter the results of the forecasted socioeconomic impacts, as economic and population trends would remain unchanged from the assumptions in the analysis.

number of variables. That is, how much of the casino's revenue comes at the expense of other business establishments in the area depends on how many and what type of other establishments are within the same market area as the casino, disposable income levels of local residents and their spending habits, as well as other economic and psychological factors affecting the consumption decisions of local residents.

Existing Tribal Casino Gaming Market Substitution Effects

An analysis of the potential substitution effects of Alternative A on other gaming facilities based on the gaming market and the distance, size, and quality of nearby facilities was conducted and is included in **Appendix A**. The analysis included developing a market demand gravity model, as described in the appendix to **Appendix A**.

Whenever a new casino opens in a new market area, a certain amount of market substitution is to be expected. The various gaming alternatives are projected to cause an estimated decline in revenue of competing facilities in the first year of project operation, as shown below in **Table 4.7-3**. The gaming operations of five tribal casinos are projected to experience competitive impact from the opening of Alternative A: Rolling Hills Casino, Pit River Casino, Feather Falls Casino & Lodge, Gold County Casino & Hotel, and Colusa Casino Resort (**Appendix A**).

TABLE 4.7-3
ESTIMATED YEAR 1 GAMING SUBSTITUTION EFFECTS¹

Revenue Source	Alternatives				
	A	B	C	E	F
Rolling Hills Casino	-5.8%	-5.8%	-3.0%	-9.0%	-1.4%
Pit River Casino	-7.2%	-7.2%	-4.7%	-3.5%	-1.3%
Feather Falls Casino & Lodge	-0.5%	-0.5%	-0.2%	-0.9%	-0.1%
Gold Country Casino & Hotel	-0.6%	-0.6%	-0.2%	-1.1%	-0.2%
Colusa Casino Resort	-0.4%	-0.4%	-0.1%	-0.6%	-0.1%
Notes: 1 – Presented as a percent of estimated Year 1 gross gaming revenue. Source: Appendix A .					

Substitution effects are anticipated to diminish after the first year of Alternative A operation because local residents would have experienced the casino and would gradually return to more typical and more diverse spending patterns. Substitution effects also tend to diminish after the first full year of operations because, over time, growth in the total population and economic growth tend to increase the dollar value of demand for particular goods and services. The substitution effects resulting from Alternative A to competing gaming facility revenues are not expected to significantly impact these facilities, or to cause their closure. Additionally, Pit River Casino revenues (the facility that would be most affected by Alternative A) are estimated to return to baseline (i.e., as if there were no project) revenues in eight years (**Appendix A**). Therefore, it is anticipated that under Alternative A, the above-listed tribal facilities would continue to operate and generate a sufficient level of cash flow that would be utilized by the tribal

governments that own them to provide services to their respective memberships. No physical environmental effects would occur.

Non-Gaming Substitution Effects

A portion of the substitution effects would come from spending on non-gaming categories, such as food and beverage, retail, lodging, and entertainment, that would have occurred at the competing gaming operations had the gaming spending occurred there rather than at Alternative A. A smaller portion would come from spending that would have occurred at non-gaming related businesses but went to Alternative A instead. The dominant components of non-gaming substitution effects are shown in **Table 4.7-4**.

TABLE 4.7-4
NON-GAMING SUBSTITUTION EFFECTS

Revenue Source	Alternatives				
	A	B	C	D	E
Hotel ¹	2.9%	2.9%	3.8%	0.5%	3.8%
Large-Scale Retail ²	24.1%	-- ³	24.1%	23.9%	23.9%
Notes: 1 – Percent substitution of existing room sale in the City of Redding 2 – Total market sales substitution as a percent of existing sporting goods sales in the City of Redding 3 – No large-scale retail is proposed under Alternative B. Source: Figure 38 and 42 of Appendix A .					

The hotel component of Alternative A would be an integral part of the gaming venue. Consequently, the patrons to the hotel would be the casino patrons, which is a distinct market segment from those patrons who stay at the existing non-gaming hotels in the vicinity of the Strawberry Fields Site. As stated in **Appendix A**, casino hotels are developed primarily for marketing, player development programs, and to induce additional casino visitation. Therefore, it is estimated that there would be minimal substitution in the local hotel market (**Appendix A**). It is estimated that competitive effects to hotels in the City of Redding (City) would be approximately 2.9 percent of the revenue of those hotels during the first year of Alternative A operations (**Table 4.7-4**). Thus, Alternative A would have a less-than-significant effect on competing hotel facilities.

Retail offered within Alternative A would consist of gaming-related retail and a large-scale outdoor sporting goods store (refer to **Section 2.3.2**). The small retail shops and restaurants would be oriented towards casino customers and therefore would not have a significant substitution effect, as they exist to complement the gaming portion of Alternative A. The large-scale sporting store, which would have a regional draw, would draw business from existing retailers in the area. The majority of the projected sales of this component of Alternative A would capture sales from outside the region (**Appendix A**). It is estimated that competitive effects to City sporting goods retailers would be approximately 24.1 percent of the revenues of those retailers during the first stabilized year of Alternative A operations (**Table 4.7-4**). However, no significant effects, such as urban blight, would occur as Alternative A is not expected to

cause the closure of any competing facilities. As noted above in *Existing Tribal Casino Gaming Market Substitution Effects*, competition itself is not enough to conclude there is a detrimental impact from a project. Thus, there would be a less-than-significant effect from the large-scale retail component of Alternative A.

The events and conference center under Alternative A would consist of 800 more seats than present in the existing Win-River Casino. Due to the nature of current entertainment programming offered at the Win-River Casino (music acts, comedy), it is not anticipated Alternative A would have any quantifiable effect on existing entertainment venues within the City. For example, the 2,000-seat Redding Civic Auditorium and the 1,350-seat Cascade Theater host a substantial number of other events (including symphonies, performing arts, community events, etc.), with which the events and conference center would not directly compete (**Appendix A**). Therefore, substitution effects to local event venues under Alternative A would be less than significant.

Fiscal Effects

Alternative A would result in a variety of fiscal impacts. The Tribe would not pay corporate income taxes on revenue or property taxes on tribal land. Alternative A would also increase demand for public services, resulting in increased costs for local governments to provide these services. Tax revenues would be generated for federal, state and local governments from activities including secondary economic activity generated by tribal gaming (i.e., the indirect and induced effects of the economic impact analysis). The taxes on secondary economic activity include: corporate profits tax, income tax, sales tax, excise tax, property tax, and personal non-taxes, such as motor vehicle licensing fees, other fees, and fines.

As discussed in **Section 2.0**, Alternative A would include the transfer of the seven parcels that make up the Strawberry Fields Site from fee status into federal trust for the benefit of the Tribe, resulting in the loss of local property taxes. As shown in **Table 3.7-5**, during the 2017 fiscal year, the parcels making up the Strawberry Fields Site generated \$33,962 in property tax income for state, county, and local governments. Because property in trust is not subject to local taxes, these property taxes would be lost to state and local governments. However, as shown in **Table 4.7-5**, the lost property taxes would be more than offset by sales tax revenues on secondary economic activity generated by Alternative A. Operation of Alternative A would generate substantial economic output for a variety of business in the region, and thus generate substantial tax revenues for state, County, and local governments. Potential effects due to the loss of tax revenues resulting from the operation as a sovereign nation on trust land would be offset by increased state, county, and local tax revenues resulting from operation of Alternative A. Overall, Alternative A would result in a beneficial impact to the local economy in the County.

Additionally, spending on unemployment and social services can be expected to decrease due to the new employment and earnings generated by Alternative A. However, spending on public services, including

police, fire, medical, and other emergency services, can be expected to increase because of the added visitation. These effects are addressed separately in **Section 4.10**. Net effects to the fiscal finances of state and local governments would be less than significant with the implementation of the mitigation measures described in **Section 5.10** and Best Management Practices (BMPs) identified in **Section 2.3.2**.

TABLE 4.7-5
APPROXIMATE PROJECTED CHANGES IN TAX REVENUE (IN MILLIONS OF DOLLARS)

	Alternatives					
	A	B	C	D	E	F
Construction (One-Time)						
Federal	\$12.2	\$18.3	\$21.1	\$8.0	\$25.0	\$4.6
State/County/Local	\$22.3	\$9.9	\$11.5	\$4.4	\$13.6	\$2.5
Operation (Annually, 2017 Dollars)						
Federal	\$2.4	\$1.5	\$2.0	\$0.9	\$2.1	\$0.2
State/County/Local	\$1.9	\$1.2	\$1.6	\$0.7	\$1.6	\$0.1
Notes: Rounded to nearest hundred thousand dollars. The operational tax revenues indicated in the table include indirect and induced taxes only. Due to the project's unique circumstances, including the proposed location on trust land, direct tax revenues were not quantifiable. As such, actual tax revenues generated by the project may be greater than those indicated above as direct personal income tax has not been included in the totals. Source: Appendix A .						

Property Values

The construction of a casino resort may result in changes to local property values, which could impact local tax assessor rolls and local property tax revenues. Changes in appreciation rates of adjacent properties could also impact future property tax revenues. Changes in property value can be affected by a number of factors, including the proximity of the casino to other properties in the vicinity, the mix of properties surrounding the casino, whether the casino stimulates additional development and whether or not the casino is located in an urban area. Impacts to surrounding commercial and industrial uses would probably be neutral to positive because a casino development would bring increased economic activity and because such a project may stimulate additional commercial development in the vicinity of the site.

While the Strawberry Fields Site itself is zoned for agricultural uses, there are residences located near the site. However, as stated in **Appendix A**, there is no anticipated impact on residential home values because of the existing operation of the Win-River Casino in the larger market area, the location of the Strawberry Fields Site near Interstate 5 (I-5) and other commercial areas. Consequently, it is reasonable to conclude that the development of Alternative A would have a less-than-significant impact on surrounding housing property values.

Employment

Investment in construction and operational activities would generate substantial direct employment opportunities and wages, as well as indirect and induced employment opportunities and wages. The

IMPLAN model was used to estimate employment positions generated by the operation of Alternative A, as described in **Appendix A**.

Construction

As shown in **Table 4.7-6**, investment in direct construction activities under Alternative A would generate a one-time total of approximately 2,127 jobs (**Appendix A**). Employment opportunities generated from construction of Alternative A would result in wage generation. Wage totals include hourly and salary payments as well as benefits including health and life insurance and retirement payments. Under Alternative A, investment in construction activities would generate one-time total wages of approximately \$99.1 million (**Table 4.7-6**). The construction of Alternative A would result in indirect and induced economic activity that would generate additional jobs and wages.

TABLE 4.7-6
ONE-TIME SHASTA COUNTY CONSTRUCTION EMPLOYMENT AND WAGE IMPACTS

	Alternative					
	A	B	C	D	E	F
Employment (jobs)						
Direct	1,372	1,114	1,295	497	1,537	280
Indirect and Induced	756	631	713	260	855	170
Total	2,127	1,745	2,008	757	2,392	450
Wages (millions)						
Direct	\$67.6	\$55.2	\$63.8	\$24.2	\$75.6	\$13.8
Indirect and Induced	\$31.4	\$26.1	\$29.7	\$10.9	\$35.5	\$7.0
Total	\$99.1	\$81.4	\$93.5	\$35.2	\$111.2	\$20.8
Source: Appendix A .						

Operation

As calculated through IMPLAN, operational activities associated with Alternative A would generate approximately 921 new jobs in the County, as shown in **Table 4.7-7**. The existing Win-River Casino currently supports 425 employment positions (Redding Rancheria, 2017). Alternative A would result in a net increase of 650 direct job opportunities within the County (**Table 4.7-7; Appendix A**). Therefore, total direct employment at the new facility under Alternative A is estimated at 1,075 positions. Net indirect and induced employment opportunities were estimated to total 271 jobs (**Appendix A**).

Operational activities associated with Alternative A would generate an increase of \$23.9 million in wages in the County (**Table 4.7-7, Appendix A**). Direct wages within the County are estimated to total approximately \$14.2 million. Indirect and induced wages are estimated to total \$9.7 million, respectively (**Appendix A**).

The figures in **Table 4.7-7** account for the closure of the existing Win-River Casino (under Alternatives A, B, C, and E), but have not been adjusted for competitive or substitution effects within the gaming industry. Therefore, these estimates do not take into account changes in spending patterns that may occur because of increased consumption of gaming entertainment by patrons. Net of these effects, the incremental change in economic activity would be less than shown in **Table 4.7-7** because jobs and wages at competitive facilities in the County would be less under the Alternatives shown than they would otherwise be in the absence of the Alternatives.

TABLE 4.7-7
ANNUAL SHASTA COUNTY OPERATIONAL EMPLOYMENT AND WAGE IMPACTS¹

	Alternative					
	A	B	C	D	E	F
Employment (jobs)						
Direct	650	319	558	346	554	45
Indirect/Induced	271	175	222	98	229	19
Total	921	494	780	445	783	64
Wages (millions)						
Direct	\$14.2	\$5.9	\$12.7	\$8.6	\$12.4	\$0.9
Indirect/Induced	\$9.7	\$6.0	\$8.0	\$3.7	\$8.2	\$0.7
Total	\$23.9	\$11.9	\$20.6	\$12.3	\$20.6	\$1.6
Notes: 1 – Economic impacts shown as of stabilized operation. Source: Appendix A .						

Based on the unemployment data provided in **Section 3.7.1**, this new employment represents 21 percent of the number of unemployed persons in the County (**Table 3.7-3**). Because many of the workers for the newly created jobs would come from the greater County area, and because some of the jobs would be filled by persons who are under-employed, the operation of Alternative A is not expected to strain labor market capacity. Additionally, job creation under Alternative A would result in employment and wages for persons previously unemployed and would contribute to the alleviation of poverty among lower income households. This is a beneficial impact; no mitigation is warranted.

Housing

Although the majority of the employees at Alternative A would be local residents, some employees would relocate due to the specialized nature of some casino positions and the limited amount of gaming in the County. Most job creation would not require employees to move residences but rather would change their commute patterns. Based on the anticipated levels of in-migration to the County, **Appendix A** estimates that approximately 75 people would relocate into the County for an employment position at Alternative A. Similarly, an estimated 46 people would relocate to the City. As shown in **Table 3.7-2**, that would represent approximately one percent of the available housing stock in the County and the City, respectively. As evidenced by the housing stock data and as stated in Figure 59 of **Appendix A**, the

available housing supply would not be unduly burdened by Alternative A. As there are anticipated to be more than enough vacant homes to support potential impacts to the regional labor market, Alternative A is not expected to stimulate regional housing development. Alternative A would not cause a significant adverse impact to the housing market. Potential indirect effects resulting from growth inducement are discussed further in **Section 4.14**.

Social Effects

Problem and Pathological Gambling

Gambling, in one form or another, is now legal in every state except Hawaii and Utah. According to a study performed by the National Gambling Impact Study Commission (NGISC), approximately 86 percent of Americans report having gambled at least once during their lifetimes, and 63 percent report having gambled at least once during the previous year (NGISC, 1999). This estimate is based on participation in all forms of gambling, including lotteries, poker, Internet gambling, betting, and casino gambling.

As described in **Table 4.7-8**, behaviors of casino customers can be broken down into five categories. Gaming customers are motivated to visit a casino for a variety of reasons, and some of those reasons may be viewed as criteria that define an individual as a problem gambler.

TABLE 4.7-8
FIVE BEHAVIORS OF CASINO CUSTOMERS

Behavior Type	Characteristics
Recognition Seekers	Small share of total players. Have high expectation of recognition from the property they patronize. The reward to the casino is an intensely loyal and frequent visitor.
Escapists	Seek a getaway that does not resemble their everyday routine. Prefer to remain anonymous. Require minimal maintenance in the form of personal attention and complimentary services from the casino.
Reward Seekers	Driven by the casino's play rewards program or promotions that compensate them for their play. Gamers will play at the casino with the best deal.
Socializers	Visit a casino to be around others. Once they identify with a particular property, they become very loyal, with high levels of visitation.
Professionals	Pay very close attention to the types of games a casino offers. Generate large coin handle and accumulate voluminous amounts of slot club points. Loyalty goes to the casino where they can make the most money.
Source: Information compiled by AES in 2010.	

The American Psychiatric Association (APA) describes pathological gambling as an impulse control disorder characterized by “persistent and recurrent maladaptive gambling behavior that disrupts personal, family, or vocational pursuits. The gambling pattern may be regular or episodic, and the course of the disorder is typically chronic” (NGISC, 1999). The APA has established 10 criteria for diagnosing a pathological and problem gambler: preoccupation, tolerance, withdrawal, escape, chasing, lying, loss of control, illegal acts, risked significant relationship, and financial bailout. At-risk gaming participants

typically meet one or two of these criteria; problem gamblers typically meet three or four of these criteria; and pathological gamblers typically meet at least five of these criteria. Collectively, both pathological and problem gambling are referred to as “problem gambling.”

Three studies, two completed in 1997 and one completed in 1998, estimated that the percentage of American adults classified as pathological gamblers ranged from 1.2 to 1.6 percent (NGISC, 1999). The NGISC noted that pathological gambling often occurs in conjunction with other behavioral problems, including substance abuse, mood disorders, and personality disorders. Even if it were possible to isolate the effects of problem gambling on people who suffer from these types of additional problems, it is difficult to then isolate the effects of casino gambling from other forms of gambling. As discussed, casino gambling is only one form of gambling. In fact, the most prevalent forms of gambling are those found in most neighborhoods: scratch-off lottery cards, lotto, and video lottery terminals. See **Appendix A** for more information on problem and pathological gambling as well as the social costs of gaming.

Residents of the County are presently exposed to gaming facilities (as mentioned in **Section 3.7.2**). The existing Win-River Casino is located less than two miles from the Strawberry Fields Site. Thus, the relocation of the existing casino under Alternative A would not substantially increase the availability of gaming venues to persons who are risk of problem gambling. The current Tribal-State Compact also includes provisions that allow the State to use funds paid by the Tribe for programs designed to address problem gambling; it is anticipated the new Compact would include similar provisions. This effect would be less than significant. Additionally, mitigation in **Section 5.7**, involving the implementation of policies similar to those in effect at the existing Win-River Casino, including a self-exclusion policy and informational literature regarding problem gambling available at various locations within the facility to help those who may be affected by problem gaming, would further reduce this less-than-significant impact.

Crime

There is a general belief that the introduction of legalized gambling into a community increases crime. However, this argument is often based on anecdotal evidence rather than empirical evidence. Whenever large volumes of people are introduced into an area, the volume of crime would be expected to increase. This is true of any large-scale development. Taken as a whole, literature on the relationship between gambling and crime rates suggests that communities with gaming facilities are as safe as communities without. For example, a study published in 2011 compared crime effects from different forms of tourism growth. The study revealed that ski tourism resulted in a larger increase in crime than casino development (Park and Stokowski, 2011). In addition, Nichols and Tosun (2017) examined casinos and crime rates across the United States from 1994 to 2012. They found that on average there was an increase in crime in counties that opened Tribal casinos for the first two years and after there was a *decreased* crime rate from pre-casino levels. There was no long-term increase in crime resulting from casinos (Nichols and Tosun, 2017). Alternative A would result in an increased number of patrons and employees

traveling/commuting into the area on a daily basis. As a result, under Alternative A, criminal incidents may increase in the vicinity of the Strawberry Fields Site, as would be expected with a large development of any type. Conversely, the number of people traveling to the existing Win-River Casino would decrease, and the rate of criminal incidents in the vicinity of the Win-River Casino Site would be expected to experience a corresponding decline. Potential impacts to law enforcement services are addressed in **Section 4.10**. As described therein, it is anticipated that the Tribe is expected to enter into a service agreement with Redding Police Department (RPD) and/or Shasta County Sheriff's Office (SCSO) to fully reimburse the affected department for quantifiable direct and indirect costs incurred in conjunction with the provision of law enforcement services. Through the implementation of this agreement, the on-site security measures, and the mitigation and BMPS described in **Section 5.10.3** and **2.3.2** respectively, impacts would be addressed and Alternative A would result in a less-than-significant effect on law enforcement services and crime.

Community Effects

Schools

As discussed in **Appendix A**, approximately 22 percent of households in the County have children who may require public school education. Based on the range of new household estimates provided in **Appendix A**, the County is estimated to experience the addition of approximately 40 school-age children due to employment-driven in-migration (Figure 59 of **Appendix A**). As shown in Figure 59 of **Appendix A**, the number of students in K-12 education in the County is projected to decline, even with the addition of children of employees who move to the County. Because anticipated new students would likely be distributed across grade levels and schools, the impact of new student enrollment on the regional educational infrastructure resulting from implementation of Alternative A would be negligible. Further, schools districts would collect additional tax revenue from the families of the estimated 40 new students. Thus, overall impacts on education infrastructure and costs would not be significant, and no mitigation is warranted.

Libraries and Parks

Because there are no libraries within three miles of the Strawberry Fields Site, Alternative A would not result in significant impact to libraries, nor would the number of students and families added to the County due to employment-driven in-migration impact library resources (**Appendix A**). No mitigation is warranted. Patrons of Alternative A are not anticipated to frequent parks and recreational facilities before or after visiting the casino or hotel facilities. Impacts resulting from casino patronage or employment-driven population increases would be negligible. No mitigation is warranted.

Effects to the Redding Rancheria (Tribe)

Alternative A would generate new income to fund the operation of the tribal government. This income is anticipated to have a beneficial effect on Tribal quality of life, health, education, culture, and expectations

by funding tribal programs that serve tribal members, including education, health care, housing, social services, and tribally-sponsored cultural events, and by supporting tribal self-sufficiency and self-determination. Additionally, tribal members would have access to new jobs created on the Strawberry Fields Site. Employment generated by this alternative would not only allow tribal members to enjoy a better standard of living, but would also provide an opportunity for tribal members to reduce or end their dependence on state and federal assistance programs.

The casino is projected to generate millions of dollars annually for the Tribe. According to the Indian Gaming Regulatory Act (IGRA) 25 United States Code (USC) Section 2710 (b)(2)(B):

“...net revenues from any tribal gaming are not to be used for purposes other than (i) to fund tribal government operations or programs; (ii) to provide for the general welfare of the Indian tribe and its members; (iii) to promote tribal economic development; (iv) to donate to charitable organizations; or (v) to help fund operations of local government agencies.”

IGRA also requires that the Tribe develop a plan to use gaming revenues for these purposes, which must be approved by the Secretary of the Interior, before making any distributions to individual Tribal members.

Environmental Justice: Minority and Low-Income Communities

Section 3.7.2 describes local populations near the Strawberry Fields Site to determine if any minority or low-income populations exist. The review of the demographics of Census tracts showed that neither the Strawberry Fields Site nor any of the adjacent Census tracts were identified as containing a substantial minority or low-income community. Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative A are discussed above under *Substitution Effects*. Alternative A would result in a less-than-significant impact to minority and low-income communities.

4.7.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Economic Effects

The economic effects for both construction and operation of Alternative B would be similar to those described for Alternative A, but of a lesser scale since Alternative B is reduced in size and scope.

Construction

Alternative B is expected to generate a one-time total of approximately \$221.4 million in construction output (**Table 4.7-1**). This total output figure includes direct output as well as indirect and induced output. In addition, the construction of Alternative B would result in indirect and induced economic

activity among a variety of different industries and businesses throughout the County. Output received by County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Operation

Alternative B is expected to generate an annual operational output of approximately \$50.7 million within the County (**Table 4.7-2**). Direct output (net the closure of the existing Win-River Casino) is estimated to total approximately \$30.7 million, while indirect and induced output is estimated to total \$20.0 million.

Operation of Alternative B would generate increased revenues for a variety of businesses in the County as a result of increased economic activities. Output received by area businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact that is less than the beneficial impact of Alternative A. No mitigation is required.

Substitution Effects

Existing Tribal Casino Gaming Market Substitution Effects

As noted under Alternative A, whenever a new casino opens in a market area, a certain amount of market substitution is to be expected. Alternative B is anticipated to cause a decline in gaming revenue to competing gaming facilities (**Appendix A**). See **Table 4.7-3** for the estimated substitution effect on tribal casinos. This revenue decline at competing tribal casinos is not anticipated to significantly impact these casinos or to cause their closure. As discussed in **Section 4.7.1**, impacts tend to diminish after the first year of a project's operation. Therefore, it is anticipated that under Alternative B, the competing tribal facilities would continue to operate and generate a sufficient level of cash flow that would be utilized by the tribal governments that own them to provide services to their respective memberships. No physical environmental effects would occur.

Non-Gaming Substitution Effects

Similar to Alternative A, potential non-gaming substitution effects represent a small portion of total economic activity that would be generated by Alternative B. As shown in **Table 4.7-4**, the estimated hotel substitution effect of Alternative B would be the same as under Alternative A, but as no large-scale sporting goods store is proposed under Alternative B, there would be no substitution effect to the large-scale retail market. As discussed in **Section 4.7.1**, it is likely that the operation of the proposed casino would stimulate local retail and restaurant businesses by drawing customers from outside the local area. This effect is anticipated to offset any substitution effects to local retail businesses. Substitution effects to local area hotels are estimated at 2.9 percent of the revenue of those hotels during the first year of stabilized operations (**Table 4.7-4**) and declining in subsequent years. Because Alternative B does not include a large-scale retail component, impacts to such local businesses would be zero (**Table 4.7-4**). Substitution effects from the event center, which is the same size under Alternatives A and B, would be

similar to those described in **Section 4.7.1**. Thus, as with Alternative A, no significant non-gaming substitution effects would occur as a result of Alternative B.

Fiscal Effects

As described in **Section 2.4**, and similar to Alternative A, Alternative B would include the transfer of the same seven parcels that make up the Strawberry Fields Site from fee status into federal trust for the benefit of the Tribe, resulting in the loss of local property taxes (refer to **Section 4.7.1**). However, as shown in **Table 4.7-5**, such lost property taxes would be more than offset by tax revenues generated for state, county, and local governments from secondary economic activity associated with Alternative B. Tax revenues would be generated from the same activities discussed in Alternative A. Potential effects due to the loss of tax revenues resulting from the operation as a sovereign nation on trust land would be offset by increased state, county, and local tax revenues resulting from operation of Alternative B. Overall, Alternative B would result in a beneficial impact to the local economy in the County that is less than the beneficial impact under Alternative A.

Additionally, spending on unemployment and social services can be expected to decrease due to the new employment and earnings generated by Alternative B. However, while spending on public services, including police, fire, medical, and other emergency services, can be expected to increase because of the added visitation. These effects are addressed separately in **Section 4.10**. Net effects to the fiscal finances of state and local governments would be less than significant with the implementation of the mitigation measures described in **Section 5.10** and BMPs identified in **Section 2.3.2**.

Property Values

Impacts to the values of properties in the vicinity of the Strawberry Fields Site would be similar to the impacts under Alternative A. Such impacts would be less than significant, and no mitigation is warranted.

Employment

Construction

As shown in **Table 4.7-6**, direct construction of Alternative B is projected to create a total of 1,745 one-time construction-related jobs and generate one-time wages of \$81.4 million (**Appendix A**). The construction of Alternative B would result in indirect and induced economic activity that would generate additional jobs and wages.

Operation

Operation activities associated with Alternative B would generate approximately 494 new jobs in the County (**Table 4.7-7**). Direct employment impacts are estimated to total approximately 319 jobs. Net indirect and induced employment opportunities are estimated at 175 jobs. Operational activities

associated with Alternative B would generate wages of approximately \$11.9 million within the County (**Table 4.7-7**). Direct wages are estimated to total approximately \$5.9 million. Indirect and induced wages are estimated at \$6.0 million. Alternative B would create jobs and wages during the operation phase for persons previously unemployed, which would increase the ability of the population to provide themselves with health and safety services and contribute to the alleviation of poverty among lower income households. This is considered a beneficial effect of Alternative B that is less than the beneficial effect of Alternative A.

Housing

Effects to the housing market in the County are discussed in **Section 4.7.1**. As stated therein, available housing stock would be able to fulfill the demands for housing under Alternative B. Indirect impacts resulting from growth inducement are discussed further in **Section 4.14**. This impact would be comparable, but to a lesser extent, than Alternative A. Alternative B would not result in significant adverse effects to the housing market.

Social Effects

Social impacts including pathological and problem gambling, and crime from Alternative B would be of a similar type but of a lesser extent than Alternative A, since Alternative B is reduced in size and scope. Mitigation is included in **Section 5.0**.

Community Effects

Community impacts including effects to schools, libraries, and parks from Alternative B would be of a similar type but of a lesser extent than Alternative A, since Alternative B is reduced in size and scope. Impacts would be less than significant, and no mitigation is required.

Effects to the Redding Rancheria (Tribe)

The effects to the Tribe under Alternative B would be beneficial, but to a lesser extent than Alternative A. Refer to **Section 4.7.1**. This is considered a beneficial impact of Alternative B.

Environmental Justice: Minority and Low-Income Communities

As stated in **Section 4.7.1**, neither the Census tract containing the Strawberry Fields Site nor any adjacent Census tracts were determined to contain a substantial minority or low-income community (refer to **Section 3.7.2**). Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative B are discussed above under *Substitution Effects*. Alternative B would have a less-than-significant impact to minority and low-income communities.

4.7.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Economic Effects

The direct economic effects for both construction and operation of Alternative C would be similar to those described for Alternative A, but of a lesser scale since Alternative C is reduced in size and scope.

Construction

Alternative C is expected to generate a one-time total of approximately \$255.4 million in construction output (**Table 4.7-1**). This total output figure includes direct output as well as indirect and induced output. In addition, the construction of Alternative C would result in indirect and induced economic activity among a variety of different industries and businesses throughout the County. Output received by the County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Operation

Alternative C is expected to generate an annual operational output of approximately \$68.0 million within the County (**Table 4.7-2**). Direct output (net the closure of the existing Win-River Casino) is estimated to total approximately \$41.9 million and indirect and induced output is estimated at \$26.2 million.

Operation of Alternative C would generate increased revenues for a variety of businesses in the County as a result of increased economic activities. Output received by area businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact that is less than the beneficial impact of Alternative A. No mitigation is required.

Substitution Effects

Existing Tribal Casino Gaming Market Substitution Effects

As noted under Alternative A, whenever a new casino opens in a market area, a certain amount of market substitution is to be expected. Alternative C is anticipated to cause a decline in gaming revenue to competing gaming facilities (**Appendix A**). See **Table 4.7-3** for the estimated substitution effect on tribal casinos. This revenue decline at competing tribal casinos is not anticipated to significantly impact these casinos or to cause their closure. As discussed in **Section 4.7.1**, impacts tend to diminish after the first year of a project's operation. Therefore, it is anticipated that under Alternative C, the competing tribal facilities would continue to operate and generate a sufficient level of cash flow that would be utilized by the tribal governments that own them to provide services to their respective memberships. No physical environmental effects would occur.

Non-Gaming Substitution Effects

A portion of the substitution effects that would come from spending on non-gaming categories, such as food and beverage, retail, lodging and entertainment, which would have occurred at existing business but went to Alternative C instead. Alternative C would also have a competitive impact on existing hotels in the City, as shown in **Table 4.7-4**, of 3.8 percent in the first year of stabilized operations (Figure 38 of **Appendix A**) and declining in subsequent years. In addition to room revenue taken from existing hotels, approximately 23.9 percent, as shown in **Table 4.7-4**, at Alternative C would come from existing large-scale retail. The large-scale sporting store, which would have a regional draw, would draw business from existing retailers in the area. The majority of the projected sales of this component of Alternative C would capture sales from outside the region (**Appendix A**). It is estimated that competitive effects to City sporting goods retailers would be approximately 24.1 percent of the revenues of those retailers during the first stabilized year of Alternative C operations (**Table 4.7-4**). Substitution effects would not be of a magnitude that would cause a physical effect to the environment (such as urban blight); as described above, competition itself does not constitute a significant impact. Substitution effects from the event center, which is the same size under Alternatives A and C, would be similar to those described in **Section 4.7.1**. Therefore, substitution effects would not be significant, and no mitigation is recommended.

Fiscal Effects

As described in **Section 2.5**, and similar to Alternative A, Alternative C would include the transfer of same seven parcels that make up the Strawberry Fields Site from fee status into federal trust for the benefit of the Tribe, resulting in the loss of local property taxes (refer to **Section 4.7.1**). However, as shown in **Table 4.7-5**, such lost property taxes would be more than offset by tax revenues generated for State, County, and local governments from secondary economic activity associated with Alternative C. Tax revenues would be generated from the same activities discussed in Alternative A. Potential effects due to the loss of tax revenues resulting from the operation as a sovereign nation on trust land would be offset by increased State, County, and local tax revenues resulting from operation of Alternative C. Overall, Alternative C would result in a beneficial impact to the local economy in the County that is less than the beneficial impact under Alternative A.

Additionally, spending on unemployment and social services can be expected to decrease due to the new employment and earnings generated by Alternative C. However, while spending on public services, including police, fire, medical, and other emerge services, can be expected to increase because of the added visitation. These effects are addressed separately in **Section 4.10**. Net effects to the fiscal finances of state and local governments would be less than significant with the implementation of the mitigation measures described in **Section 5.10** and BMPs identified in **Section 2.3.2**.

Property Values

Impacts to the values of properties in the vicinity of the Strawberry Fields Site would be similar to the impacts under Alternative A. However, because Alternative C is smaller in size compared to Alternative

A, the resulting impacts on property values are likely to be smaller than those that would occur under Alternative A. Such impacts would be less than significant.

Employment

Construction

As shown in **Table 4.7-6**, direct construction of Alternative C is projected to create a total of 2,008 one-time construction-related jobs and generate one-time wages of \$93.5 million (**Appendix A**). The construction of Alternative C would result in indirect and induced economic activity that would generate additional jobs and wages.

Operation

Operation activities associated with Alternative C would generate approximately 780 new full-time employment opportunities in the County (**Table 4.7-7**). Direct employment impacts are estimated to total approximately 558 jobs. Operational activities associated with Alternative C would generate an increase of approximately \$20.6 million within the County (**Table 4.7-7**). Direct wages are estimated to total approximately \$12.7 million. The generation of employment and wages during the operations phase for persons previously unemployed, which would increase the ability of the population to provide themselves with health and safety services and contribute to the alleviation of poverty among lower income households, is considered a beneficial effect of Alternative C that is less than the beneficial effect of Alternative A.

Housing

Effects to the housing market in the County are discussed in **Section 4.7.1**. As stated therein, available housing stock would be able to fulfill the demands for housing under Alternative C. This impact would be comparable, but to a lesser extent, than Alternative A. Alternative C would not result in significant adverse effects to the housing market. Indirect impacts resulting from growth inducement are discussed further in **Section 4.14**.

Social Effects

Social impacts including pathological and problem gambling, and crime from Alternative C would be of a similar type but of a lesser extent than Alternative A, since Alternative C is reduced in size and scope. Mitigation is included in **Section 5.0**.

Community Effects

Community impacts including effects to schools, libraries, and parks from Alternative C would be of a similar type but of a lesser extent than Alternative A, since Alternative C is reduced in size and scope. Impacts would be less than significant, and no mitigation is required.

Effects to the Redding Rancheria (Tribe)

The effects to the Tribe under Alternative C would be beneficial, but to a lesser extent than Alternative A. Refer to **Section 4.7.1**. This is considered a beneficial impact of Alternative C.

Environmental Justice: Minority and Low-Income Communities

As stated in **Section 4.7.1**, neither the Census tract containing the Strawberry Fields Site nor any adjacent Census tract were determined to contain a substantial minority or low-income community (refer to **Section 3.7.2**). Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative C are discussed above under *Substitution Effects*. Alternative C would have a less-than-significant impact to minority and low-income communities.

4.7.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Economic Effects

Construction

Alternative D is expected to generate a one-time total of approximately \$96.7 million in construction output (**Table 4.7-1**). This total output figure includes direct output as well as indirect and induced output, which would be distributed among a variety of different industries and businesses throughout the County. Output received by the County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Operation

Alternative D is expected to generate an annual operational output of approximately \$32.0 million within the County (**Table 4.7-2**). Direct output is estimated to total approximately \$20.1 million, while indirect and induced output is estimated at \$12.0 million.

Operation of Alternative D would generate substantial output to a variety of businesses in the County. Output received by local businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact that would be less beneficial than that of Alternatives A, B, and C.

Substitution Effects

Alternative D would also have a competitive impact on existing hotels in the City, as shown in **Table 4.7-4**, of 0.5 percent in the first year of stabilized operations (Figure 38 of **Appendix A**) and declining in subsequent years. In addition to room revenue taken from existing hotels, approximately 23.9 percent, as shown in **Table 4.7-4**, at Alternative D would come from the existing large-scale retail market. Nevertheless, substitution effects would not be of a magnitude that would cause a physical effect to the

environment (such as urban blight); as described in **Section 4.7.1**, competition itself does not constitute a significant impact. Substitution effects from the event center, which is the same size under Alternatives A and D, would be similar to those described in **Section 4.7.1**. Therefore, the effect would not be significant, and no mitigation is recommended.

Fiscal Effects

As described in **Section 2.6**, and similar to Alternative A, Alternative D would include the transfer of the same seven parcels that make up the Strawberry Fields Site from fee status into federal trust for the benefit of the Tribe, resulting in the loss of local property taxes (refer to **Section 4.7.1**). However, as shown in **Table 4.7-5**, such lost property taxes would be more than offset by tax revenues generated for State, County, and local governments from secondary economic activity associated with Alternative D. Because Alternative D does not include a gaming component, the mix of effects is different from the alternatives described above. However, overall, Alternative D would result in a beneficial impact to the local economy in the County that is less than the beneficial impact under Alternative A. No mitigation is warranted.

Additionally, spending on unemployment and social services can be expected to decrease due to the new employment and earnings generated by Alternative D. However, while spending on public services, including police, fire, medical, and other emergency services, can be expected to increase because of the added visitation. These effects are addressed separately in **Section 4.10**. Net effects to the fiscal finances of state and local governments would be less than significant with the implementation of the mitigation measures described in **Section 5.10** and BMPs identified in **Section 2.3.2**.

Property Values

Any impacts to the values of properties in the vicinity of the Strawberry Fields Site would be less than under Alternative A because Alternative D is smaller in scope than Alternative A. Although Alternative D is a hotel and retail project, not a casino resort, both types of development are considered commercial properties. Consequently, the resulting impacts on property values are likely to be similar to, though smaller, than those that would occur under Alternative A. Impacts to property values under Alternative D would be less than significant.

Employment

Construction

As calculated through IMPLAN, construction of Alternative D is projected to create a total of 757 one-time construction-related jobs and generate one-time wages of \$35.2 million (**Table 4.7-6**). The construction of Alternative D would result in indirect and induced economic activity that would generate additional jobs and wages.

Operation

Operational activities associated with Alternative D would generate approximately 455 new jobs in the County (**Table 4.7-7**). Direct employment impacts are estimated to total approximately 346 jobs, while indirect and induced employment opportunities total 98 jobs. Under Alternative D, investment in operational activities would generate annual total wages of approximately \$12.3 million within the County (**Table 4.7-7**). Direct wages in the County are estimated to total approximately \$8.6 million, and indirect and induced wages would total \$3.7 million. The generation of employment and wages during the operation phase is considered a beneficial effect of Alternative D that is less beneficial than Alternatives A, B, and C.

Housing

Effects to the housing market in the County are discussed in **Section 4.7.1**. As stated therein, available housing stock would be able to fulfill the demands for housing under Alternative D. Indirect impacts resulting from growth inducement are discussed further in **Section 4.14**. This impact would be comparable, but to a lesser extent, than Alternative A. Alternative D would not result in significant adverse effects to the housing market.

Social Effects

Social impacts including crime from Alternative D would be of a similar type but of a lesser extent as those under Alternative A. As no gaming is proposed under Alternative D, problem and pathological gambling impacts would not occur. Mitigation in **Section 5.0** would ensure no adverse social impacts would occur.

Community Effects

Community impacts including effects to schools, libraries, and parks from Alternative D would be of a similar type but of a lesser extent than Alternative A, since Alternative D is reduced in size and scope. Impacts would be less than significant, and no mitigation is required.

Effects to the Redding Rancheria (Tribe)

Beneficial effects to the Tribe under Alternative D would be substantially less than those under Alternative A due to the reduced size and scope of development and the lack of a gaming component.

Environmental Justice: Minority and Low-Income Communities

As stated in **Section 4.7.1**, neither the Census tract containing the Strawberry Fields Site nor any adjacent Census tract were determined to contain a substantial minority or low-income community (refer to **Section 3.7.2**). Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative

D are discussed above under *Substitution Effects*. Alternative D would have a less-than-significant impact to minority and low-income communities.

4.7.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Economic Effects

Construction

Alternative E is expected to generate a one-time total of approximately \$305.5 million in construction output (**Table 4.7-1**). This total output figure includes direct output as well as indirect and induced output, which would be distributed among a variety of different industries and businesses throughout the County. Output received by County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Operation

Alternative E is expected to generate an annual operational output (net the closure of the existing Win-River Casino) of approximately \$69.7 million (**Table 4.7-2**). Direct output is estimate to total approximately \$42.8 million, while indirect and induced output is estimated at \$26.9 million.

Operation of Alternative E would generate increased revenues for a variety of businesses in the County as a result of increased economic activities. Output received by area businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact. No mitigation is required.

Substitution Effects

Existing Tribal Casino Gaming Market Substitution Effects

As noted under Alternative A, whenever a new casino opens in a market area, a certain amount of market substitution is to be expected. Alternative E is anticipated to cause a decline in gaming revenue to competing gaming facilities (**Appendix A**). See **Table 4.7-3** for the estimated substitution effect on these and other tribal casinos. This revenue decline at competing tribal casinos is not anticipated to significantly impact these casinos or to cause their closure. As discussed in **Section 4.7.1**, impacts tend to diminish after the first year of a project's operation. Therefore, it is anticipated that under Alternative E, the competing tribal facilities would continue to operate and generate a sufficient level of cash flow that would be utilized by the tribal governments that own them to provide services to their respective memberships. No physical environmental effects would occur.

Non-Gaming Substitution Effects

A portion of the substitution effects that would come from spending on non-gaming categories, such as food and beverage, retail, lodging and entertainment, which would have occurred at existing business but

went to Alternative E instead. Alternative E would also have a competitive impact on existing hotels in the area, as shown in **Table 4.7-4**, of 3.8 percent in the first year of stabilized operations (Figure 38 of **Appendix A**) and declining in subsequent years. In addition to room revenue taken from existing hotels, approximately 23.9 percent, as shown in **Table 4.7-4**, at Alternative E would come from existing large-scale retail. The large-scale sporting store, which would have a regional draw, would draw business from existing retailers in the area. The majority of the projected sales of this component of Alternative E would capture sales from outside the region (**Appendix A**). It is estimated that competitive effects to local sporting goods retailers would be approximately 23.9 percent of the revenues of those retailers during the first stabilized year of Alternative E operations (**Table 4.7-4**). Substitution effects would not be of a magnitude that would cause a physical effect to the environment (such as urban blight); as described above, competition itself does not constitute a significant impact. Therefore, the effect would not be significant, and no mitigation is recommended.

Fiscal Effects

Alternative E would involve the transfer of the four parcels making up the Anderson Site from fee status into federal trust status, as described in **Section 2.7**. Property taxes levied on the Anderson Site, as shown in **Table 3.7-5**, are less than the Strawberry Fields Site. As shown in **Table 4.7-5**, the fiscal effects of Alternative E would be similar to those of Alternative A. Refer to **Section 4.7.1**. Alternative E would generate substantial tax revenues for state, County, and local governments. Potential effects due to the loss of state and federal tax revenues resulting from the operation as a sovereign nation on trust land would be offset by increased local, State, and federal tax revenues resulting from construction and operation of Alternative E (see **Table 4.7-5**). Overall, Alternative E would result in a beneficial impact to the local economy in the County.

Property Values

As stated in **Appendix A**, there is no anticipated impact on residential home values because of the existing operation of the Win-River Casino in the larger market area and the location of the Anderson Site near I-5 and other commercial areas. Consequently, the development of Alternative E would have a less-than-significant impact on surrounding housing property values.

Employment

Construction

As shown in **Table 4.7-6**, direct construction of Alternative E is projected to create a total of 2,392 one-time construction-related jobs and generate one-time wages of \$111.2 million. The construction of Alternative E would result in indirect and induced economic activity that would generated additional jobs and wages.

Operation

Operational activities associated with Alternative E would generate approximately 783 new jobs in the County (**Table 4.7-7**). Direct employment impacts are estimated to total approximately 554 jobs. Net indirect and induced employment opportunities are estimated at 229 jobs. Operational activities associated with Alternative E would generate an increase of approximately \$20.6 million within the County (**Table 4.7-7**). Direct wages are estimated to total approximately \$12.4 million, while indirect and induced wages are estimated at \$8.2 million. The generation of employment and wages during the operation phase for persons previously unemployed, which would increase the ability of the population to provide themselves with health and safety services and contribute to the alleviation of poverty among lower income households, is considered a beneficial effect of Alternative E that is less than the beneficial effect of Alternative A.

Housing

Due to the proximity of the Anderson Site to the Strawberry Fields Site and the relatively similar number of jobs generated under Alternative A and Alternative E, the effect of Alternative E on the regional housing market is similar to that of Alternative A. Refer to **Section 4.7.1**. Alternative E would not cause a significant adverse impact to the housing market. Potential indirect effects resulting from growth inducement are discussed further in **Section 4.14**.

Social Effects

Social impacts, including pathological and problem gambling, and crime from Alternative E would be of a similar type as those from Alternative A. Mitigation is included in **Section 5.0**.

Community Effects

Community impacts including effects to schools, libraries, and parks from Alternative E would be of a similar type as those from Alternative A. Impacts would be less than significant, and no mitigation is required.

Effects to the Redding Rancheria (Tribe)

The effects to the Tribe under Alternative E would be beneficial, similar to those under Alternative A. Refer to **Section 4.7.1**. This is considered a beneficial impact of Alternative E.

Environmental Justice: Minority and Low-Income Communities

Neither the Census tract containing the Anderson Site nor any adjacent Census tracts were determined to contain a substantial minority or low-income community (refer to **Section 3.7.2**). Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative E are discussed above under

Substitution Effects. Alternative E would have a less-than-significant impact to minority and low-income communities.

4.7.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Economic Effects

Construction

Alternative F is expected to generate a one-time \$305.5 million in construction impact (**Table 4.7-1**). This total output figure includes direct output as well as indirect and induced output. In addition, the construction of Alternative F would result in indirect and induced economic activity among a variety of different industries and businesses throughout the County. Output received by the County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Operation

Alternative F is expected to generate an annual operational output of \$5.7 million within the County (**Table 4.7-2**). Direct output is estimated at approximately \$3.4 million, while indirect and induced output is estimated at \$2.2 million.

Operation of Alternative F would generate substantial output to a variety of businesses in the County. Output received by County businesses would in turn increase their spending, and labor demand, thereby further stimulating the local economy. This would be considered a beneficial impact.

Substitution Effects

As shown in **Table 4.7-3**, no competing gaming facilities would experience a substitution effect of more than 1.5 percent, which is a negligible impact. Therefore, substitution effects are less than significant. No mitigation is necessary.

Fiscal Effects

Under Alternative F, the Tribe would continue not paying corporate income taxes on revenue or property taxes on tribal land. In addition, Alternative F may slightly increase demand for public services, which may result in increased costs for local governments to provide these services. Refer to **Section 4.10** for an analysis of these impacts. Tax revenues would be generated for federal, State, and local governments from the same indirect and induced activities discussed under Alternative A. Alternative F would be constructed on land that is already held in trust by the federal government for the Tribe. Therefore, no property tax impacts would occur, as no property tax is assessed on tribal land. Overall, as shown in **Table 4.7-4**, Alternative F would result in a slight beneficial impact to local government revenues.

Property Values

The operation of Alternative F would stimulate a relatively mild increase in patronage to the existing Win-River Casino and would not result in a change in land use. Consequently, Alternative F would not have a significant effect on local property values.

Employment

Construction

As calculated through IMPLAN, construction of Alternative F is projected to create a total of 450 one-time construction-related jobs and generate one-time wages of \$20.8 million (**Table 4.7-6**).

Operation

Operation activities associated with Alternative F would generate approximately 64 jobs in the County (**Table 4.6-7**). Direct employment impacts were estimated to total approximately 45 jobs, while indirect and induced employment opportunities were estimated to total 19 jobs. Under Alternative F, investment in operational activities would generate annual total wages of approximately \$1.6 million within the County (**Table 4.7-7**). Direct wages were estimated at approximately \$0.9 million, while indirect and induced wages were estimated at \$0.7 million. The generation of employment and wages during the operation phase is considered a beneficial effect of Alternative F.

Housing

Due to the limited amount of new employment positions, it is not anticipated that there would be any additional housing need due to residential relocation of new employees into the County (**Appendix A**). Therefore, Alternative F would have a less-than-significant effect on housing.

Social Effects

Social impacts, including problem gambling and crime, of Alternative F would be a fraction of the effects of Alternative A, due to the significantly reduced scope of Alternative F in comparison with Alternative A. Alternative F would introduce new patrons and employees into the vicinity of the Win-River Casino Site. As a result, under Alternative F, criminal incidents may increase in the vicinity of the Win-River Casino Site. Potential impacts to law enforcement services are addressed in **Section 4.10** with mitigation measures provided in **Section 5.10** and BMPs identified in **Section 2.3.2**. As described therein, impacts would be less than significant.

Community Effects

Impacts would be similar to those described under Alternative A. Impacts to libraries and parks in the vicinity of the Win-River Casino Site (refer to **Section 3.7.2**) would be less than those described under

Alternative A, as Alternative F would employ fewer additional people. Impacts would be less than significant, and no mitigation is required.

Effects to the Redding Rancheria (Tribe)

Alternative F would not produce a substantial additional revenue stream to fund essential governmental, social, and other services but would generate some additional revenue for the Tribe. Alternative F would have a neutral impact to slightly positive on the Tribe.

Environmental Justice: Minority and Low-Income Communities

Neither the Census tract containing the Win-River Casino Site nor any adjacent Census tracts were determined to contain a substantial minority or low-income community (refer to **Section 3.7.2**). Effects to the Tribe, a minority community, are discussed above and would be positive. Effects to tribal governments operating gaming facilities that may be impacted by operation of Alternative F are discussed above under *Substitution Effects*. Alternative F would have a less-than-significant impact to minority and low-income communities.

4.7.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, neither the Strawberry Fields nor the Anderson Site would be taken into trust. No development would occur in the near future on those sites, nor would expansion would occur on the Win-River Casino Site. No adverse or beneficial effects to socioeconomic conditions would result from this alternative.

4.8 TRANSPORTATION/CIRCULATION

This section identifies the direct effects to transportation and circulation that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.8**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Measures to mitigate for adverse effects identified in this section, if warranted, are presented in **Section 5.8**.

4.8.1 ANALYSIS METHODOLOGY

The project would result in the addition of vehicle traffic to local intersections. A Traffic Impact Study (TIS) was prepared for the project alternatives and is provided in **Appendix F**. This section incorporates the results of the study and any potential adverse effects to the transportation network.

Methodologies

Trip Generation Rates

Trip generation for development projects is generally based on trip rates in the most recent version of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Typical Friday PM and Saturday PM peak hours were chosen for representative samples of peak hour activity based on existing traffic volume information and expected trip generation of the Proposed Project.

Casino

The ITE Trip Generation Manual does not include a land use category similar to the proposed casino/resort. Trip generation for the proposed casino was evaluated based on a compilation of data gathered from similar casino projects, including the Thunder Valley Casino, Cache Creek Casino Resort, and existing Win-River Casino (Kimley-Horn, 2016). The rate used for casino land uses includes other auxiliary and internal uses in addition to the gaming area, including bars, restaurants, back of house, lounges, etc (**Appendix F**). Accordingly, separate trip generation rates were not applied for these uses under Alternatives A, B, C, E, and F.

Hotel

Trip generation for the hotel was calculated based on data from the Trip Generation Manual, 9th Edition. Because it is assumed that hotel guests would also utilize related on-site facilities, including the casino, the ITE hotel trip generation rate was reduced by 75 percent. This rate reduction is consistent with the casino resort trip generation research and adjustments demonstrated in the traffic studies for other northern California gaming facilities (Kimley-Horn, 2016).

Conference Center

The ITE Trip Generation Manual does not include a land use category similar to the proposed conference center. Trip generation for the conference center was based on professional assumptions made by

Kimley-Horn based on experience with other similar projects. The capacity of the 10,080-square foot (sf) conference was estimated to be 672 people. Kimley-Horn then assumed that a typical event would draw an average of 85 percent of the total estimated capacity, or 571 people. From that amount of attendees, it was assumed that 25 percent would stay at the hotel, and that the remaining attendees would drive to the event with an assumed vehicle occupancy rate (VOR) of 2.2 persons per vehicle. Events at the conference center are anticipated to begin between 7:00 and 8:00 pm, which is outside the PM peak hour. Conservatively, 10 percent of conference center trips were added as existing trips during the peak hour to reflect short duration site visits and potential pick-up/drop-off activities (Kimley-Horn, 2016).

Event Center

The event center would have 1,800 seats under Alternatives A, B, C, and E. The ITE Trip Generation Manual does not include a land use category similar to the proposed event center. Like the trip generation rate of the conference center, trip generation for the event center was based on professional assumptions made by Kimley-Horn, based on information collected from a similar facility. Based on this information, it was assumed that the majority of patrons visiting the event center would be already on site at the casino; therefore, 30 percent of the event center patrons were assigned as new trips. As such, 50 percent of patrons were assigned to the PM peak hour trip, arriving before an event begins. Conservatively, 10 percent of these trips were added as existing trips during the peak-hour to reflect short duration site visits and potential pick-up/drop-off activities. Kimley-Horn assumed a VOR of 2.2 persons per vehicle (Kimley-Horn, 2016).

Restaurant

Trip generation for on-site restaurants under Alternative D that are not a part of the hotel was calculated based on data from the Trip Generation Manual, 9th Edition. The proposed sports bar and specialty restaurant are represented by ITE 983 (High Turnover Restaurant) and ITE 931 (Quality Restaurant), respectively (Kimley-Horn, 2016). As mentioned above, under Alternatives A, B, C, and E, the trip generation rate for the casino is based on trip rates at similar casino facilities that also include restaurants/food service; thus the trip generation rate for the casino is inclusive of trips from the proposed restaurants under these alternatives.

Outdoor Sports Retail

Trip generation for the retail facility was calculated based on data from the Trip Generation Manual, 9th Edition. The peak hour of the retail facility was conservatively assumed to be the same as the peak hour of the casino facility (Kimley-Horn, 2016).

Renovation of Existing Casino for Tribal Governmental and Housing Uses

Because the existing Win-River Casino would be closed under alternatives that include a casino on the Strawberry Fields or Anderson Sites (Alternatives A, B, C, and E) and converted into tribal government and housing uses, casino-related trips to the existing Win-River Casino would not occur under these alternatives. The proposed changes in land use at the Win-River Casino Site (from Casino-hotel to tribal

governmental and housing uses) are expected to result in approximately one-third of the trips that currently access the existing Win-River Casino remaining on the network. As a result, to accurately evaluate the conditions at the study intersections, roadway segments, and freeway facilities with the addition of Alternatives A, B, C, or E, the existing Win-River Casino's trips were first removed from the network and the trips anticipated to be generated by the conversion of the Win-River Casino Site were the added to the network. The number of trips that currently access the Win-River Casino was determined based on traffic volume counts taken at the casino driveways in July 2016. These were subtracted from the roadway network based on the existing casino traffic distribution and the number of trips estimated to be generated by the potential renovation were then added back into the roadway network based on the existing tribal services traffic distribution.

Trip Reductions

Diverted link trips are trips that are already on the road, but are diverted from the current roadway to another roadway to access the site. Kimley-Horn assumed diverted link trip reduction rates of 10-15 percent for casino and retail land uses, as these trips are not new trips to the roadway network, consistent with California Department of Transportation (Caltrans) guidance (Kimley-Horn, 2016). For the Strawberry Fields Site and Anderson Site, diverted linked trips would be attributable to the proximity of the sites to Interstate 5 (I-5).

Significance Criteria

Table 4.8-1 provides the local LOS standards based on jurisdiction, including Shasta County (County), the City of Redding (City), the City of Anderson, and Caltrans.

Buildout Year (2025) Baseline Conditions

The background and future forecast assumptions used for this traffic analysis were based on planned and approved short-term (2025 buildout year or "opening year" as referred to throughout this chapter) and long-term (2040 cumulative year; refer to **Section 4.15**) changes to land use and transportation systems as identified in local and regional planning and programming documents and travel demand forecasting model projections. The TIS made the following conservative assumptions:

- Buildout Year (2025) Baseline Conditions assumed the existing roadway geometry and traffic control, which conservatively assumes no improvements to roadways between existing conditions (2016) and buildout year conditions (2025) will occur. Planned near-term roadway improvements would increase the efficiency of intersections and roadways; however, these improvements are not assumed to occur until after 2025, which results in an overestimation of level of service (LOS) and delay.

- Buildout Year (2025) Baseline Conditions assumed full buildout of the River Crossing Marketplace (including a 152,000-sf Costco) located at the South Bonnyview Road / I-5 interchange.
- The peak hour of the hotel and retail facilities was assumed to occur at the same time as the casino peak hour, even though this is not likely, to analyze the maximum possible impact of traffic generated by the project alternatives.

TABLE 4.8-1
LOCAL LEVEL OF SERVICE STANDARDS

Jurisdiction	Satisfactory Criteria	Significance Criteria	
		Operating Acceptably under Existing Conditions	Operating Unacceptably under Existing Conditions
Shasta County	LOS C	LOS C	An increase in delay of 5 or more seconds for intersections, and an increase in v/c of 0.05 or more for roadway segments.
City of Redding	LOS C/D	<ul style="list-style-type: none"> ▪ LOS C for arterial streets and intersections. ▪ LOS D for areas in the downtown area, as well as along streets within the state highway system and corresponding intersections. ▪ An increase above 2,000 daily vehicles or 180 peak hour vehicles on local streets ▪ An increase above 4,000 daily vehicles or 260 peak hour vehicles on residential collectors. 	An increase in delay of more than 5 seconds for intersections (and meets peak hour signal warrants), an increase in v/c by more than 0.05 at roadway segments, any increase in daily or peak hour vehicles to local streets, and any increase in traffic to a residential collector.
City of Anderson ¹	LOS D	LOS D	An increase in delay of 5 or more seconds for intersections, and an increase in v/c of 0.05 or more for roadway segments.
Caltrans	LOS D	LOS D	The existing LOS and related measure of effectiveness (i.e. delay, percent time-spent-following, and average speed) are to be maintained.
Notes: 1 – The City of Anderson provides LOS D as the minimum acceptable service standard. Shasta County criteria are used for City of Anderson facilities, as they are more restrictive. Source: Kimley-Horn, 2018 (Appendix F).			

Table 4.8-2 summarizes baseline traffic conditions during the Friday and Saturday PM peak hours in the buildout year (2025) at each of the study intersections without the addition of project-related traffic.

TABLE 4.8-2
BUILDOUT YEAR (2025) INTERSECTION LOS WITHOUT PROJECT

ID	Intersections	Control	LOS Target	Peak Hour	Buildout Year (2025)	
					Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	23.2	C
				Sat PM	20.2	C
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	17.8	B
				Sat PM	7.5	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	49.9	D
				Sat PM	15.1	B

4.0 Environmental Consequences

ID	Intersections	Control	LOS Target	Peak Hour	Buildout Year (2025)	
					Delay (sec)	LOS
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	103.1	F
				Sat PM	27.9	C
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	54.6	D
				Sat PM	19.7	B
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	96.2	F
				Sat PM	43.6	D
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	17.2	C
				Sat PM	11.2	B
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	68.0	F
				Sat PM	16.6	C
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	21.1	C
				Sat PM	11.2	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.3	B
				Sat PM	9.3	A
11	Market St (SR-273) / Westwood Ave	Signal	D	Fri PM	12.7	B
				Sat PM	10.2	B
12	Market St (SR-273) / Clear Creek Rd	Signal	D	Fri PM	6.2	A
				Sat PM	5.4	A
13	Market St (SR-273) / Girvan Rd	Signal	D	Fri PM	14.7	B
				Sat PM	12.3	B
14	Market St (SR-273) / Redding Rancheria Rd	Signal	D	Fri PM	9.1	A
				Sat PM	8.1	A
15	Canyon Rd / Redding Rancheria Rd	Signal	D	Fri PM	11.5	B
				Sat PM	10.0	A
16	Market St (SR-273) / Happy Valley Rd	Signal	D	Fri PM	7.4	A
				Sat PM	6.4	A
17	Market St (SR-273) / North St	Signal	D	Fri PM	15.9	B
				Sat PM	12.7	B
18	North St / Oak St	SSSC	D	Fri PM	24.3	C
				Sat PM	14.6	B
19	North St / I-5 SB Off-Ramp	AWSC	D	Fri PM	12.2	B
				Sat PM	9.0	A
20	North St / I-5 NB On-Ramp (McMurray Dr)	AWSC	D	Fri PM	36.2	E
				Sat PM	13.7	B
21	Balls Ferry Rd / Oak St	SSSC	D	Fri PM	15.0	C
				Sat PM	12.8	B
22	Balls Ferry Rd / I-5 SB On-Ramp (Ventura St)	Signal	D	Fri PM	26.5	C
				Sat PM	8.6	A
23		Signal	D	Fri PM	23.3	C

ID	Intersections	Control	LOS Target	Peak Hour	Buildout Year (2025)	
					Delay (sec)	LOS
	Balls Ferry Rd / I-5 NB Off-Ramp (McMurray Dr)			Sat PM	8.3	A
Notes: Bold and highlighted cells represent unacceptable conditions. Source: Kimley-Horn, 2018 (Appendix F).						

As shown in **Table 4.8-2**, the following study intersections are projected to operate at unacceptable LOS under buildout year conditions without the addition of project-related traffic:

- South Bonnyview Road / I-5 Southbound (SB) Ramps (Friday PM);
- South Bonnyview Road / Churn Creek Road (Friday PM);
- Churn Creek Road / Victor Avenue (Friday PM); and
- North Street / I-5 Northbound (NB) On-Ramp/McMurray Drive (Friday PM).

Table 4.8-3 and **4.8-4** summarize the conditions of the study roadway segment conditions in the buildout year (2025) without the addition of any alternative. As shown therein, all of the study roadway segments would operate at acceptable LOS at the buildout year without project-related traffic.

TABLE 4.8-3
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS WITHOUT PROJECT – TWO-LANE

Roadway Segment Number ¹	Roadway Segment	Peak Hour	Analysis Direction	LOS	PFFS (%)	v/c
Strawberry Fields Site						
2	Bechelli Ln south of Bonnyview Rd	Fri PM	NB	A	92.7	0.05
			SB	A	92.7	0.05
		Sat PM	NB	A	93.6	0.03
			SB	A	93.6	0.03
3	Churn Creek Rd east of Alrose Ln	Fri PM	EB	C	77.9	0.46
			WB	C	78.6	0.38
		Sat PM	EB	C	82.8	0.26
			WB	C	82.8	0.27
4	Smith Rd west of Churn Creek Rd	Fri PM	EB	A	98.1	0.01
			WB	A	98.1	0.03
		Sat PM	EB	A	94.5	0.01
			WB	A	94.5	0.02
Anderson Site						
1	North St west of Oak St	Fri PM	EB	B	84.4	0.24
			WB	B	84.0	0.26
		Sat PM	EB	B	89.6	0.15
			WB	B	89.6	0.15

Roadway Segment Number ¹	Roadway Segment	Peak Hour	Analysis Direction	LOS	PFFS (%)	v/c
2	Oak St south of North St	Fri PM	NB	A	98.1	0.02
			SB	A	98.1	0.02
		Sat PM	NB	A	98.4	0.01
			SB	A	98.4	0.01
3	North St east of Oak St	Fri PM	EB	C	82.6	0.31
			WB	C	82.9	0.28
		Sat PM	EB	B	88.1	0.17
			WB	B	88.1	0.19
4	Oak St north of North St	Fri PM	NB	A	97.4	0.05
			SB	A	97.4	0.04
		Sat PM	NB	A	97.7	0.03
			SB	A	97.7	0.04
Win-River Casino Site						
3	Canyon Rd south of Redding Rancheria Rd	Fri PM	NB	B	85.0	0.15
			SB	B	84.6	0.24
		Sat PM	NB	B	86.9	0.15
			SB	B	86.9	0.13
Notes: PFFS = Percent Free-Flow Speed; v/c = volume to capacity ratio; NB = northbound; SB = southbound; EB = eastbound; WB = westbound All two-lane roadway segments meet current LOS target under buildout year (2025) conditions. 1 – Refer to Figures 3.8-1, 3.8-2, and 3.8-3. Source: Kimley-Horn, 2018 (Appendix F).						

Table 4.8-5 summarizes the buildout year conditions of the freeway segments without the addition of any alternative. As shown therein, all study freeway segments are projected to operate at acceptable LOS in the buildout year (2025) without project traffic.

TABLE 4.8-4
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS WITHOUT PROJECT – MULTILANE

Roadway Segment Number	Roadway Segment	Peak Hour	Analysis Direction	LOS	Density (pc/mi/ln)
Strawberry Fields Site					
1	Bonnyview Rd west of Bechelli Ln	Fri PM	EB	B	17.0
			WB	B	17.7
		Sat PM	EB	A	10.1
			WB	B	12.5
Win-River Casino Site					
1	Market St (SR-273) north of Canyon Rd	Fri PM	NB	A	7.1
			SB	A	8.8
		Sat PM	NB	A	4.9
			SB	A	5.8
2	Market St (SR-273) south of Canyon Rd	Fri PM	NB	A	4.9
			SB	A	5.5
		Sat PM	NB	A	3.1
			SB	A	3.1
Notes: All multilane roadway segments meet current LOS target under buildout year (2025) conditions. NB = northbound; SB = southbound; EB = eastbound; WB = westbound 1 – Refer to Figures 3.8-1 and 3.8-3 . Source: Kimley-Horn, 2018 (Appendix F).					

TABLE 4.8-5
BUILDOUT YEAR (2025) FREEWAY SEGMENT LOS WITHOUT PROJECT

I-5					Buildout Year (2025)	
Direction	Freeway Segment Number ¹	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS
Strawberry Fields Site						
Northbound	1	South of Bonnyview Rd Off-Ramp	Basic	Fri PM	17.1	B
				Sat PM	12.6	B
	2 NB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	12.9	B
				Sat PM	10.2	B
	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	8.3	A
				Sat PM	6.5	A
	4 NB	Bonnyview Rd On-Ramp	Merge	Fri PM	24.0	C
				Sat PM	17.9	B
	5	North of Bonnyview Rd On-Ramp	Basic	Fri PM	12.9	B
				Sat PM	9.6	A
Southbound	5	North of Bonnyview Rd Off-Ramp	Basic	Fri PM	16.0	B
				Sat PM	11.8	B
	2 SB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	20.0	C
				Sat PM	15.9	B

I-5					Buildout Year (2025)	
Direction	Freeway Segment Number ¹	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS
	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	11.4	B
				Sat PM	8.8	A
	4 SB	Bonnyview Rd On-Ramp	Merge	Fri PM	26.8	C
				Sat PM	18.4	B
	1	South of Bonnyview Rd On-Ramp	Basic	Fri PM	26.1	D
				Sat PM	16.7	B
Anderson Site						
Northbound	1	South of Balls Ferry Rd Off-Ramp	Basic	Fri PM	20.6	C
				Sat PM	16.0	B
	2 NB	Balls Ferry Rd Off-Ramp	Diverge	Fri PM	24.5	C
				Sat PM	18.9	B
	3	Balls Ferry Rd Off-Ramp to North St On-Ramp	Basic	Fri PM	16.2	B
				Sat PM	13.3	B
	4 NB	North St On-Ramp	Merge	Fri PM	22.6	C
				Sat PM	18.0	B
	5	North St On-Ramp to Riverside Ave Off-Ramp	Basic	Fri PM	19.0	C
				Sat PM	15.0	B
Southbound	5	Riverside Ave On-Ramp to North St Off-Ramp	Basic	Fri PM	28.6	D
				Sat PM	20.5	C
	4 SB	North St Off-Ramp	Diverge	Fri PM	33.8	D
				Sat PM	25.8	C
	3	North St Off-Ramp to Balls Ferry Rd On-Ramp	Basic	Fri PM	24.1	C
				Sat PM	18.4	C
	2 SB	Balls Ferry Rd On-Ramp	Merge	Fri PM	31.9	D
				Sat PM	25.3	C
	1	South of Balls Ferry Rd On-Ramp	Basic	Fri PM	29.3	D
				Sat PM	21.6	C
Notes: All freeway segments meet current LOS target under buildout year (2025) conditions. 1 – Refer to Figures 3.8-1 and 3.8-2 . Source: Kimley-Horn, 2018 (Appendix F).						

4.8.2 ALTERNATIVE A – PROPOSED PROJECT

Construction Traffic

During construction, there would be approximately 605 daily construction trips to and from the Strawberry Fields Site. This estimate was developed based on trips rates for project construction as calculated by the California Emissions Estimator Model (CalEEMod) developed by the California Air Resources Board (CARB; **Appendix I**). This includes construction trips to the Off-site Access

Improvement Areas identified in **Section 2.2.2**. Impacts related to construction traffic would be temporary in nature and would cease upon completion of the project. Although most construction trips would likely take place outside peak traffic hours, they are assumed to occur during peak hours for the purpose of this analysis, in order to obtain a conservative estimate. The maximum operational peak hour trip generation under Alternative A is 1,257 Saturday PM peak hour trips, as described below. This is greater than the construction trip estimate for Alternative A (605 trips). It is anticipated that the majority of construction traffic would travel to the site from the north or south, including trips from the City of Redding and the City of Anderson. These trips would primarily utilize I-5 as a regional route to access South Bonnyview Avenue, from which traffic would turn onto Bechelli Lane. Because these roadway segments are all expected to operate at acceptable LOS during the buildout year with project traffic (refer to analysis below), the addition of traffic associated with the construction of Alternative A would not result in significant impacts. However, mitigation measures are included in **Section 5.8** to further ensure trips associated with construction do not contribute to unacceptable roadway conditions.

Project Traffic

Trip Generation

See **Section 4.8.1** for an explanation of trip generation methodology. **Table 4.8-6** displays the proposed components and estimated trip generation for Friday and Saturday PM peak hours.

TABLE 4.8-6
ALTERNATIVE A TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Casino	48,060	GFA	9,277	302	302	605	8,273	348	213	561
Conference Center	10,080	sf	965	111	11	122	965	111	11	122
Event Center	1,800	Seats	1,063	123	12	135	1,063	123	12	135
Hotel	250	Rooms	511	19	18	38	512	25	20	45
Sporting Goods Superstore	130,000	sf	2,927	115	124	239	3,819	255	245	499
<i>Subtotal Vehicle Trips</i>			14,742	670	468	1,139	14,632	862	501	1,363
Diverted Linked Trips – 10% ¹			(1,220)	(42)	(43)	(84)	(1,209)	(60)	(46)	(106)
Net New Project Trips			13,521	629	426	1,054	13,423	801	455	1,257
Notes: GFA = gaming floor area; sf = square feet 1 – Applied only to Casino and Sporting Goods Superstore Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

Customers and employees are expected to travel from nearby locations, as well as from the regions surrounding Redding, mainly from within the County. Due to the extensive regional roadway network surrounding the project site, trips under Alternative A would be widely distributed (please refer to

Appendix F for a detailed discussion of trip distribution estimates). Trip distribution for Alternative A is estimated as follows:

- Approximately 40 percent of project traffic would travel on I-5 north of South Bonnyview Road;
- Approximately 30 percent would travel on I-5 south of South Bonnyview Road;
- Approximately 15 percent would travel on State Route 273 (SR-273) north of South Bonnyview Road;
- Approximately 7 percent would travel on SR-273 south of South Bonnyview Road;
- Approximately 4 percent would travel on Bechelli Lane north of South Bonnyview Road; and
- Approximately 4 percent would travel on S Bonnyview Road east of I-5.

Traffic Conditions under Alternative A

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative A was added to baseline conditions established in **Section 4.8.1. Table 4.8-7** displays peak hour intersection delay and LOS at each of the study intersections under Alternative A in the buildout year (2025) for both Site Access Options. Turning movements, traffic volumes, and warrant analysis are included in the TIS included as **Appendix F**.

As shown in **Table 4.8-7**, with the addition of traffic from Alternative A, the following study intersections are projected to operate at an unacceptable LOS (parentheticals indicate in which Site Access Option and PM peak hour the exceedance occurs):

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (Site Access Option 1, Friday and Saturday PM; Site Access Option 2, Friday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday PM); and
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM).

Tables 4.8-8 and **4.8-9** summarize the study roadway segment conditions for two-lane highways and multilane highways, respectively, under Alternative A under both Site Access Options. As shown in **Tables 4.8-8** and **4.8-9**, all study roadway segments would operate under acceptable LOS at the buildout year with traffic from Alternative A. No mitigation is required.

Table 4.8-10 summarizes the freeway segment conditions at the I-5 / Bonnyview Road interchange with project related traffic from Alternative A under both Site Access Options. As shown in the table, all freeway segments at the I-5 / Bonnyview Road interchange are forecasted to operate at acceptable LOS at the buildout year with traffic from Alternative A under both Site Access Options.

TABLE 4.8-7
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE A

ID	Intersections	Control	LOS Target	Peak Hour	Site Access Option 1		Site Access Option 2	
					Delay (sec)	LOS	Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	24.2	C	23.3	C
				Sat PM	17.8	B	17.8	B
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	18.3	B	18.3	B
				Sat PM	7.5	A	7.5	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	402.3	F	210.6	F
				Sat PM	531.5	F	224.1	F
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	179.4	F	165.5	F
				Sat PM	76.9	E	82.2	F
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	119.3	F	91.7	F
				Sat PM	63.3	E	41.7	D
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	95.8	F	95.8	F
				Sat PM	43.5	D	43.5	D
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	17.9	C	17.9	C
				Sat PM	11.4	B	11.4	B
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	80.8	F	80.8	F
				Sat PM	17.7	C	17.7	C
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	23.1	C	23.1	C
				Sat PM	11.5	B	11.5	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.3	B	11.2	B
				Sat PM	9.3	A	10.4	B
24	Smith Rd / South Access Driveway	SSSC	C	Fri PM	-	-	10.1	B
				Sat PM	-	-	10.3	B
Notes: Bold and highlighted cells indicate unacceptable conditions. Source: Kimley-Horn, 2018 (Appendix F).								

TABLE 4.8-8
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE A – TWO-LANE

Roadway Segment Number	Roadway Segment	Peak Hour	Analysis Direction	Site Access Option 1			Site Access Option 2		
				LOS	PFFS (%)	v/c	LOS	PFFS (%)	v/c
2	Bechelli Ln south of Bonnyview Rd	Fri PM	NB	C	77.7	0.35	C	81.6	0.27
			SB	C	76.6	0.48	C	80.3	0.36
		Sat PM	NB	C	75.6	0.35	C	80.5	0.26
			SB	C	74.1	0.58	C	78.6	0.43
3	Churn Creek Rd east of Alrose Ln	Fri PM	EB	C	77.5	0.47	C	77.5	0.47
			WB	C	78.2	0.40	C	78.2	0.40
		Sat PM	EB	C	82.6	0.27	C	82.6	0.27
			WB	C	82.2	0.29	C	82.2	0.29
4	Smith Rd west of Churn Creek Rd	Fri PM	EB	A	98.1	0.01	B	90.9	0.10
			WB	A	98.1	0.03	A	92.2	0.15
		Sat PM	EB	A	94.5	0.01	B	87.2	0.10
			WB	A	94.5	0.02	B	87.4	0.17
Notes: PFFS = Percent Free-Flow Speed; v/c – volume to capacity ratio; NB = northbound; SB = southbound; EB = eastbound; WB = westbound All two-lane roadway segments meet current LOS target under buildout year (2025) conditions with Alternative A. 1 – Refer to Figure 3.8-1 . Source: Kimley-Horn, 2018 (Appendix F).									

TABLE 4.8-9
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE A – MULTILANE

Roadway Segment Number	Roadway Segment	Peak Hour	Analysis Direction	Site Access Option 1		Site Access Option 2	
				LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
1	Bonnyview Rd west of Bechelli Ln	Fri PM	EB	B	17.3	B	17.3
			WB	C	23.1	C	20.7
		Sat PM	EB	A	10.6	A	10.6
			WB	C	19.5	B	16.4
Notes: All multilane roadway segments meet current LOS target under buildout year (2025) conditions with Alternative A. EB = eastbound; WB = westbound 1 – Refer to Figure 3.8-1 . Source: Kimley-Horn, 2018 (Appendix F).							

The increase in traffic generated by Alternative A would contribute to unacceptable traffic operations at the study locations outlined above. Without mitigation, these locations would operate below acceptable LOS standards described in **Section 4.8.1**. Mitigation measures have been recommended within the TIS and included within **Section 5.8**. These mitigation measures include requirements to fund and/or construct key improvements to address traffic impacts related to Alternative A. With mitigation, these impacts would be reduced to a less-than-significant level.

TABLE 4.8-10
BUILDOUT YEAR (2025) FREEWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE A

I-5					Site Access Option 1		Site Access Option 2	
Direction	Freeway Segment Number ¹	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
Northbound	1	South of Bonnyview Rd Off-Ramp	Basic	Fri PM	19.0	C	17.4	B
				Sat PM	14.6	B	12.8	B
	2 NB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	14.1	B	13.0	B
				Sat PM	11.6	B	10.3	B
	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	8.5	A	8.5	A
				Sat PM	6.7	A	6.7	A
	4 NB	Bonnyview Rd On-Ramp	Merge	Fri PM	26.2	C	26.2	C
				Sat PM	20.4	C	20.4	C
	5	North of Bonnyview Rd On-Ramp	Basic	Fri PM	13.9	B	13.9	B
				Sat PM	10.6	A	10.6	A
Southbound	5	North of Bonnyview Rd Off-Ramp	Basic	Fri PM	17.5	B	17.5	B
				Sat PM	13.5	B	13.5	B
	2 SB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	20.9	C	20.9	C
				Sat PM	17.1	B	17.1	B
	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	11.7	B	11.7	B
				Sat PM	9.1	A	9.1	A
	4 SB	Bonnyview Rd On-Ramp	Merge	Fri PM	28.7	D	27.0	C
				Sat PM	20.6	C	18.8	B
	1	South of Bonnyview Rd On-Ramp	Basic	Fri PM	28.3	D	26.7	D
				Sat PM	18.4	C	17.3	B

Notes: All freeway segments meet current LOS target under buildout year (2025) conditions with Alternative A.

1 – Refer to **Figure 3.8-1**.

Source: Kimley-Horn, 2018 (**Appendix F**).

Transit, Bicycle, and Pedestrian Facilities

Implementation of Alternative A would develop the Strawberry Fields Site with limited pedestrian-oriented walkways to connect different land uses with parking areas within the site. Alternative A would not disrupt or otherwise prevent roadway improvements, including the addition of Class II bike paths. Additionally, there are currently no pedestrian pathways or bike paths extending through the site that would be impacted by development of Alternative A. As noted in **Section 3.8**, the City of Redding Bikeway Action Plan: 2010-2015 identifies areas adjacent to the Strawberry Fields Site as a potential location for a future bike path. However, the City's bikeway plans have not been fully developed and as currently shown indicate that a pedestrian bridge crossing the Sacramento River west of the Strawberry Fields Site would be required to extend the bike path to the site. Given that there are no known plans for such a bridge, it is anticipated that the City's future bikeway plans can be modified to accommodate the project. Alternative A would also not disrupt existing transit services in the vicinity of the Strawberry Fields Site. Further, construction of traffic improvements along Bechelli Lane and site access roadways

would include development of sidewalks and shoulders with adequate widths to accommodate bicyclists. Therefore, a less-than-significant impact to transit, bicycle, and pedestrian facilities under Alternative A.

4.8.3 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Construction Traffic

The temporary traffic generated during construction of Alternative B would be similar but less than that associated with Alternative A due to the elimination of the retail facility. Alternative B would generate approximately 580 construction trips (**Appendix I**; compared to 839 Friday PM peak hour trips, described below); therefore, Alternative B would result in a less-than-significant effect to traffic and circulation during construction after mitigation (included in **Section 5.8**) is implemented.

Project Traffic

Trip Generation

See **Section 4.8.1** for an explanation of trip generation methodology. **Table 4.8-11** displays the proposed components and estimated trip generation for Friday and Saturday PM peak hours.

TABLE 4.8-11
ALTERNATIVE B TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Casino	48,060	GFA	9,277	302	302	605	8,273	348	213	561
Conference Center	10,080	sf	965	111	11	122	965	111	11	122
Event Center	1,800	Seats	1063	123	12	135	1,063	123	12	135
Hotel	250	Rooms	511	19	18	38	512	25	20	45
<i>Subtotal Vehicle Trips</i>			11,815	556	344	900	10,813	607	256	863
Diverted Linked Trips – 10% ¹			(928)	(30)	(30)	(60)	(827)	(35)	(21)	(56)
<i>Net New Project Trips</i>			10,887	525	314	839	9,986	572	235	807
Notes: GFA = gaming floor area; sf = square feet 1 – Applied only to Casino Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

The trip distribution under Alternative B is the same as described under Alternative A; refer to **Section 4.8.2**.

Traffic Conditions under Alternative B

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative B was added to baseline conditions established in **Section 4.8.1**. **Table 4.8-12** displays peak hour intersection delay and LOS at each of the study intersections under Alternative

B in the buildout year (2025) for both Site Access Options. Turning movements, traffic volumes, and warrant analysis are included in the TIS included as **Appendix F**.

TABLE 4.8-12
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE B

ID	Intersections	Control	LOS Target	Peak Hour	Site Access Option 1		Site Access Option 2	
					Delay (sec)	LOS	Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	23.4	C	22.6	C
				Sat PM	17.1	B	17.1	B
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	17.9	B	17.9	B
				Sat PM	7.4	A	7.4	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	302.2	F	159.1	F
				Sat PM	253.2	F	97.0	F
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	157.3	F	147.6	F
				Sat PM	54.6	D	56.8	E
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	99.0	F	77.3	E
				Sat PM	30.8	C	22.3	C
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	95.9	F	95.9	F
				Sat PM	43.6	D	43.6	D
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	17.7	C	17.7	C
				Sat PM	11.4	B	11.4	B
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	78.9	F	78.9	F
				Sat PM	17.3	C	17.3	C
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	22.5	C	22.5	C
				Sat PM	11.3	B	11.3	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.3	B	10.9	B
				Sat PM	9.3	A	10.0	B
24	Smith Rd / South Access Driveway	SSSC	C	Fri PM	-	-	9.7	A
				Sat PM	-	-	9.5	A

Notes: **Bold** and highlighted cells indicate unacceptable conditions.
Source: Kimley-Horn, 2018 (**Appendix F**).

As shown in **Table 4.8-12**, with the addition of traffic from Alternative B, the following study intersections are projected to operate at an unacceptable LOS (parentheticals indicate in which Site Access Option and PM peak hour the exceedance occurs):

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (Site Access Option 1, Friday PM; Site Access Option 2, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday PM);

- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday PM); and
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM).

Study roadway segment conditions for two-lane highways and multilane highways, as well as freeway segment conditions were only analyzed for the Strawberry Fields Site under Alternative A, as this alternative has the highest trip generation rate. As shown in **Tables 4.8-8, 4.8-9, and 4.8-10**, all study roadway segments and freeway segments would operate under acceptable LOS at the buildout year with traffic from Alternative A, and thus, would operate acceptably under Alternative B. No mitigation is required.

The increase in traffic generated by Alternative B would contribute to unacceptable traffic operations at the study locations outlined above. Without mitigation, these locations would operate below acceptable LOS standards described in **Section 4.8.1**. Mitigation measures have been recommended within the TIS and included within **Section 5.8**. These mitigation measures include requirements to fund and/or construct key improvements to address traffic impacts related to Alternative B. With mitigation, these impacts would be reduced to a less-than-significant level.

Transit, Bicycle, and Pedestrian Facilities

Impacts to transit, bicycle, and pedestrian facilities would be the same as those described under Alternative A; refer to **Section 4.8.2**. Therefore, a less-than-significant impact to transit, bicycle, and pedestrian facilities under Alternative B.

4.8.4 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Construction Traffic

The temporary traffic generated during construction of Alternative C would be greater than that associated with Alternative A due to the adjusted acreage distribution for different land use types. Alternative C would generate approximately 638 construction trips (**Appendix I**; compared to 1,131 Saturday PM peak hour trips, described below); therefore, Alternative C would result in a less-than-significant effect to traffic and circulation during construction after mitigation (included in **Section 5.8**) is implemented.

Project Traffic

Trip Generation

See **Section 4.8.1** for an explanation of trip generation methodology. **Table 4.8-13** displays the proposed components and estimated trip generation for Friday and Saturday PM peak hours.

TABLE 4.8-13
ALTERNATIVE C TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Casino	36,060	GFA	6,960	227	227	454	6,208	261	160	421
Conference Center	10,080	sf	965	111	11	122	965	111	11	122
Event Center	1,800	Seats	1,063	123	12	135	1,063	123	12	135
Hotel	250	Rooms	511	19	18	38	512	25	20	45
Sporting Goods Superstore	130,000	sf	2,927	115	124	239	3,819	255	245	499
Subtotal Vehicle Trips			12,425	595	393	988	12,566	775	448	1,223
<i>Diverted Linked Trips – 10%¹</i>			<i>(989)</i>	<i>(34)</i>	<i>(35)</i>	<i>(69)</i>	<i>(1,003)</i>	<i>(52)</i>	<i>(40)</i>	<i>(92)</i>
Net New Project Trips			11,437	561	358	919	11,564	723	407	1,131
Notes: GFA = gaming floor area; sf = square feet 1 – Applied only to Casino and Sporting Goods Superstore Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

The trip distribution under Alternative C is the same as described under Alternative A; refer to **Section 4.8.2**.

Traffic Conditions under Alternative C

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative C was added to the baseline conditions established in **Section 4.8.1**. **Table 4.8-14** displays peak hour intersection delay and LOS at each of the study intersections under Alternative C in the buildout year (2025) for both Site Access Options. Turning movements, traffic volumes, and warrant analysis at each of the study intersections under background plus Alternative C traffic conditions are provided within the TIS (**Appendix F**).

As shown in **Table 4.8-14** and Tables 23 and 24 of **Appendix F**, with the addition of traffic from Alternative C, the following study intersections are projected to operate at an unacceptable LOS:

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday PM); and
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM).

Study roadway segment conditions for two-lane highways and multilane highways, as well as freeway segment conditions were only analyzed for the Strawberry Fields Site under Alternative A, as this alternative has the highest trip generation rate. As shown in **Tables 4.8-8, 4.8-9, and 4.8-10**, all study

roadway segments and freeway segments would operate under acceptable LOS at the buildout year with traffic from Alternative A, and thus, would operate acceptably under Alternative C. No mitigation is required.

TABLE 4.8-14
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE C

ID	Intersections	Control	LOS Target	Peak Hour	Site Access Option 1		Site Access Option 2	
					Delay (sec)	LOS	Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	22.8	C	22.8	C
				Sat PM	17.6	B	17.6	B
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	18.1	B	18.1	B
				Sat PM	7.5	A	7.5	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	334.3	F	179.8	F
				Sat PM	438.9	F	177.8	F
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	165.5	F	154.2	F
				Sat PM	68.8	E	72.9	E
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	106.4	F	82.8	F
				Sat PM	52.9	D	36.9	D
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	95.9	F	95.9	F
				Sat PM	43.5	D	43.5	D
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	17.8	C	17.8	C
				Sat PM	11.4	B	11.4	B
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	78.9	F	78.9	F
				Sat PM	17.6	C	17.6	C
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	22.6	C	22.6	C
				Sat PM	11.4	B	11.4	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.3	B	11.0	B
				Sat PM	9.3	A	10.3	B
24	Smith Rd / South Access Driveway	SSSC	C	Fri PM	-	-	9.8	A
				Sat PM	-	-	10.1	B

Notes: **Bold** and highlighted cells indicate unacceptable conditions.

Source: Kimley-Horn, 2018 (**Appendix F**).

As with Alternative A, the increase in traffic generated by Alternative C would contribute to unacceptable traffic operations at the study locations outlined above. Without mitigation, these intersections would operate below acceptable LOS standards described in **Section 4.8.1**. Mitigation measures have been recommended within the TIS and included within **Section 5.8**. Upon implementation of recommended mitigation, Alternative C would have a less-than-significant effect on all study locations.

Transit, Bicycle, and Pedestrian Facilities

Impacts to transit, bicycle, and pedestrian facilities would be the same as those described under Alternative A; refer to **Section 4.8.2**. Therefore, a less-than-significant impact to transit, bicycle, and pedestrian facilities under Alternative C.

4.8.5 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Construction Traffic

Construction impacts under Alternative D would be similar to, but significantly less than, those identified for Alternative A in **Section 4.8.2** due to the lack of a casino facility and reduction in size of other project components. Alternative D would generate approximately 218 construction trips (**Appendix I**; compared to 533 Saturday PM peak hour trips, described below). Impacts would be temporary and less than significant. Mitigation is included in **Section 5.8** to further reduce the potential for impacts.

Project Traffic

Trip Generation

See **Section 4.8.1** for an explanation of trip generation methodology. **Table 4.8-15** displays the proposed components and estimated trip generation for Friday and Saturday PM peak hours.

TABLE 4.8-15
ALTERNATIVE D TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Hotel	128	Rooms	1,046	39	38	77	1,048	52	41	92
High Turnover Restaurant	99	Seats	478	23	17	41	615	28	25	52
Quality Restaurant	66	Seats	189	11	6	17	185	13	9	22
Sporting Goods Superstore	120,000	sf	2,702	106	115	221	3,525	235	226	461
Subtotal Vehicle Trips			4,414	180	176	355	5,374	327	300	627
<i>Diverted Linked Trips – 15%¹</i>			<i>(662)</i>	<i>(27)</i>	<i>(26)</i>	<i>(53)</i>	<i>(806)</i>	<i>(49)</i>	<i>(45)</i>	<i>(94)</i>
Net New Project Trips			3,752	153	149	302	4,568	278	255	533
Notes: 1 – Applied to all uses Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

The trip distribution under Alternative D is the same as described under Alternative A; refer to **Section 4.8.2**.

Traffic Conditions under Alternative D

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative D was added to the baseline conditions established in **Section 4.8.1**. **Table 4.8-16** displays peak hour intersection delay and LOS at each of the study intersections under Alternative D in the buildout year (2025) for both Site Access Options. Turning movements, traffic volumes, and warrant analysis at each of the study intersections under background plus Alternative D traffic conditions are provided within the TIS (**Appendix F**).

TABLE 4.8-16
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE D

ID	Intersections	Control	LOS Target	Peak Hour	Site Access Option 1		Site Access Option 2	
					Delay (sec)	LOS	Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	21.4	C	20.7	C
				Sat PM	16.2	B	16.2	B
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	17.3	B	17.3	B
				Sat PM	7.4	A	7.4	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	89.6	F	68.9	E
				Sat PM	92.5	F	42.9	D
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	115.8	F	109.7	F
				Sat PM	35.0	D	35.1	D
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	64.7	E	60.6	E
				Sat PM	27.2	C	25.6	C
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	96.1	F	96.1	F
				Sat PM	43.5	D	43.5	D
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	17.3	C	17.3	C
				Sat PM	11.3	B	11.3	B
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	70.3	F	70.3	F
				Sat PM	16.9	C	16.9	C
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	21.4	C	21.4	C
				Sat PM	11.3	B	11.3	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.3	B	10.1	B
				Sat PM	9.3	A	9.6	A
24	Smith Rd / South Access Driveway	SSSC	C	Fri PM	-	-	9.0	A
				Sat PM	-	-	9.3	A

Notes: **Bold** and highlighted cells indicate unacceptable conditions.

Source: Kimley-Horn, 2018 (**Appendix F**).

As shown in **Table 4.8-16**, with the addition of traffic from Alternative D, the following study intersections are projected to operate at an unacceptable LOS (parentheticals indicate in which Site Access Option and PM peak hour the exceedance occurs):

- South Bonnyview Road / Bechelli Lane (Site Access Option 1, Friday and Saturday PM; Site Access Option 2, Friday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday PM); and
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM).

Study roadway segment conditions for two-lane highways and multilane highways, as well as freeway segment conditions were only analyzed for the Strawberry Fields Site under Alternative A, as this alternative has the highest trip generation rate. As shown in **Tables 4.8-8, 4.8-9, and 4.8-10**, all study roadway segments and freeway segments would operate under acceptable LOS at the buildout year with traffic from Alternative A, and thus, would operate acceptably under Alternative D. No mitigation is required.

The increase in traffic generated by Alternative D would contribute to unacceptable traffic operations at the study intersections outline above. Without mitigation, these intersections would operate below acceptable LOS standards described in **Section 4.8.1**. Mitigation measures have been recommended within the TIS and included within **Section 5.8**. Upon implementation of recommended mitigation, Alternative D would have a less-than-significant effect associated with traffic and circulation.

Transit, Bicycle, and Pedestrian Facilities

Impacts to transit, bicycle, and pedestrian facilities would be the same as those described under Alternative A; refer to **Section 4.8.2**. Therefore, a less-than-significant impact to transit, bicycle, and pedestrian facilities under Alternative D.

4.8.6 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Construction Traffic

During construction, there would be approximately 638 construction trips to and from the Anderson Site. This estimate was developed based on trips rates for project construction as calculated by CalEEMod developed by the CARB (**Appendix I**). Impacts related to construction traffic would be temporary in nature and would cease upon completion of the project. Although most construction trips would likely take place outside peak traffic hours, they are assumed to occur during peak hours for the purpose of this analysis, in order to obtain a conservative estimate. The maximum operational peak hour trip generation under Alternative E is 1,222 Saturday PM peak hour trips, as described below. This is greater than the construction trip estimate for Alternative E (638 trips). It is anticipated that the majority of construction traffic would travel to the site primarily from the City of Anderson and the City of Redding. These trips would primarily utilize I-5 as a regional route to access North Street, from which traffic would turn onto Oak Street. Because these roadway segments are all expected to operate at acceptable LOS during the buildout year with project traffic (refer to analysis below), the addition of traffic associated with the

construction of Alternative E would not result in significant impacts. However, mitigation measures are included in **Section 5.8** to further ensure trips associated with construction do not contribute to unacceptable roadway conditions.

Project Traffic

Trip Generation

See **Section 4.8.1** for an explanation of trip generation methodology. **Table 4.8-17** displays the proposed components and estimated trip generation for Friday and Saturday PM peak hours.

TABLE 4.8-17
ALTERNATIVE E TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Casino	48,060	GFA	9,277	302	302	605	8,273	348	213	561
Conference Center	10,080	sf	965	111	11	122	965	111	11	122
Event Center	1,800	Seats	1,063	123	12	135	1,063	123	12	135
Hotel	250	Rooms	511	19	18	38	512	25	20	45
Sporting Goods Superstore	120,000	sf	2,702	106	115	221	3,525	235	226	461
Subtotal Vehicle Trips			14,517	661	459	1,120	14,338	842	482	1,324
<i>Diverted Linked Trips – 10%¹</i>			<i>(1,198)</i>	<i>(41)</i>	<i>(42)</i>	<i>(83)</i>	<i>(1,180)</i>	<i>(58)</i>	<i>(44)</i>	<i>(102)</i>
Net New Project Trips			13,319	621	417	1,038	13,158	784	438	1,222
Notes: GFA = gaming floor area; sf = square feet 1 – Applied only to Casino and Sporting Goods Superstore Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

Due to the extensive regional roadway network surrounding the City of Anderson, trips under Alternative E would be widely distributed. Trip generation for Alternative E is estimated as follows:

- Approximately 48 percent of project traffic would travel on I-5 north of North Road;
- Approximately 22 percent would travel on SR-273 north of North Road;
- Approximately 20 percent would travel on I-5 south of Balls Ferry Road;
- Approximately 3 percent would travel on North Road north of McMurray Drive;
- Approximately 3 percent would travel on North Road west of SR-273;
- Approximately 2 percent would travel on Balls Ferry Road east of McMurray Drive;
- Approximately 1 percent would travel on South Road west of SR-273; and
- Approximately 1 percent would travel on SR-273 south of South Road.

Traffic Conditions under Alternative E

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative E was added to baseline conditions established in **Section 4.8.1**. **Table 4.8-18** displays peak hour intersection delay and LOS at each of the study intersections under Alternative E. Turning movements, traffic volumes, and warrant analysis are included in the TIS included as **Appendix F**.

TABLE 4.8-18
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE E

ID	Intersections	Control	LOS Target	Peak Hour	Buildout Year (2025)	
					Delay (sec)	LOS
17	Market St (SR-273) / North St	Signal	D	Fri PM	25.1	C
				Sat PM	19.6	B
18	North St / Oak St	SSSC	D	Fri PM	-	F
				Sat PM	-	F
19	North St / I-5 SB Off-Ramp	AWSC	D	Fri PM	36.1	E
				Sat PM	26.5	D
20	North St / I-5 NB On-Ramp (McMurray Dr)	AWSC	D	Fri PM	60.7	F
				Sat PM	18.5	C
21	Balls Ferry Rd / Oak St	SSSC	D	Fri PM	24.2	C
				Sat PM	19.2	C
22	Balls Ferry Rd / I-5 SB On-Ramp (Ventura St)	Signal	D	Fri PM	26.8	C
				Sat PM	23.1	C
23	Balls Ferry Rd / I-5 NB Off-Ramp (McMurray Dr)	Signal	D	Fri PM	25.1	C
				Sat PM	21.4	C

Notes: **Bold** and highlighted cells indicate unacceptable conditions.

Source: Kimley-Horn, 2018 (**Appendix F**).

As shown in **Table 4.8-18**, with the addition of traffic from Alternative E, the following study intersections are projected to operate at an unacceptable LOS (parentheticals indicate which significance criteria is exceeded):

- North Street / Oak Street (Friday and Saturday PM);
- North Street / I-5 SB Off-Ramp (Friday PM); and
- North Street / I-5 NB On-Ramp/McMurray Drive (Friday PM).

Table 4.8-19 summarizes the study roadway segment conditions under all alternatives. As shown in **Table 4.8-19**, all study roadway segments would operate under acceptable LOS at the buildout year with traffic from Alternative E.

TABLE 4.8-19
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE E – TWO-LANE

Roadway Segment Number ¹	Roadway Segment	Peak Hour	Analysis Direction	LOS	PFFS (%)	v/c
1	North St west of Oak St	Fri PM	EB	C	80.7	0.34
			WB	C	80.6	0.35
		Sat PM	EB	B	84.6	0.28
			WB	B	84.9	0.22
2	Oak St south of North St	Fri PM	NB	A	92.8	0.13
			SB	A	92.0	0.09
		Sat PM	NB	A	92.5	0.15
			SB	A	91.7	0.09
3	North St east of Oak St	Fri PM	EB	D	73.9	0.52
			WB	D	74.1	0.43
		Sat PM	EB	C	77.8	0.45
			WB	C	78.2	0.35
4	Oak St north of North St	Fri PM	NB	C	77.5	0.47
			SB	C	78.1	0.33
		Sat PM	NB	D	74.6	0.57
			SB	D	75.0	0.35
Notes: 1 – Refer to Figure 3.8-2 . PFFS = Percent Free-Flow Speed; v/c – volume to capacity ratio; NB = northbound; SB = southbound; EB = eastbound; WB = westbound All two-lane roadway segments meet current LOS target under buildout year (2025) conditions with Alternative E. Source: Kimley-Horn, 2018 (Appendix F).						

Table 4.8-20 summarizes the freeway ramp and merge/diverge conditions at the I-5 / North Street and I-5 / Balls Ferry Road interchanges with project related traffic from Alternative E. As shown in the table, all merge/diverge segments at the I-5 interchanges, with the exception of the North Street Off-Ramp diverge segment, are forecasted to operate at acceptable LOS at the buildout year with traffic from Alternative E.

The increase in traffic generated by Alternative E would contribute to unacceptable traffic operations at the study locations outlined above. Without mitigation, these locations would operate below acceptable LOS standards described in **Section 4.8.1**. Mitigation measures have been recommended within the TIS and included within **Section 5.8**. These mitigation measures include requirements to fund and/or construct key improvements to address traffic impacts related to Alternative E. With mitigation, these impacts would be reduced to a less-than-significant level.

Transit, Bicycle, and Pedestrian Facilities

Implementation of Alternative E would develop the Anderson Site with limited pedestrian-oriented walkways to connect different land uses with parking areas within the site. The project would not disrupt or otherwise prevent roadway improvements. The project would also not disrupt existing transit services

in the vicinity of the Anderson Site. Therefore, a less-than-significant impact to transit, bicycle, and pedestrian facilities under Alternative E.

TABLE 4.8-20
BUILDOUT YEAR (2025) FREEWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE E

I-5					Buildout Year (2025)	
Direction	Freeway Segment Number	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS
Northbound	1	South of Balls Ferry Rd Off-Ramp	Basic	Fri PM	21.8	C
				Sat PM	17.4	B
	2 NB	Balls Ferry Rd Off-Ramp	Diverge	Fri PM	25.9	C
				Sat PM	20.7	C
	3	Balls Ferry Rd Off-Ramp to North St On-Ramp	Basic	Fri PM	17.3	B
				Sat PM	14.7	B
	4 NB	North St On-Ramp	Merge	Fri PM	25.6	C
				Sat PM	21.5	C
	5	North St On-Ramp to Riverside Ave Off-Ramp	Basic	Fri PM	22.1	C
				Sat PM	18.1	C
Southbound	5	Riverside Ave On-Ramp to North St Off-Ramp	Basic	Fri PM	32.7	D
				Sat PM	24.1	C
	4 SB	North St Off-Ramp	Diverge	Fri PM	36.9	E
				Sat PM	29.7	D
	3	North St Off-Ramp to Balls Ferry Rd On-Ramp	Basic	Fri PM	24.1	C
				Sat PM	18.4	C
	2 SB	Balls Ferry Rd On-Ramp	Merge	Fri PM	32.8	D
				Sat PM	26.2	C
	1	South of Balls Ferry Rd On-Ramp	Basic	Fri PM	30.7	D
				Sat PM	22.5	C
Notes: Bold and highlighted cells indicate unacceptable conditions. 1 – Refer to Figure 3.8-2 . Source: Kimley-Horn, 2018 (Appendix F).						

4.8.7 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Construction Traffic

There would be approximately 359 construction trips to and from the Win-River Casino Site. This estimate was developed based on trips rates for project construction as calculated by CalEEMod developed by the CARB (**Appendix I**). Impacts related to construction traffic would be temporary in nature and would cease upon completion of the project. Although most construction trips would likely take place outside peak traffic hours, they are assumed to occur during peak hours for the purpose of this analysis, in order to obtain a conservative estimate. It is anticipated that the majority of construction traffic would travel to the site from the City and other nearby regional population centers, which are

generally located north and south of the Win-River Casino Site due to its location near I-5. Because these roadway segments are all expected to operate at acceptable LOS during the buildout year with project traffic (refer to analysis below), the addition of traffic associated with the construction of Alternative F would not result in significant impacts. However, mitigation measures are included in **Section 5.8** to further ensure trips associated with construction do not contribute to unacceptable roadway conditions.

Project Traffic

Trip Generation

Trip generation rates for Alternative F are consistent with the trip generation rates used for Alternatives A through E. Because there is existing traffic at the casino, the TIS credits Alternative F with the existing trips associated with the existing casino's operation and evaluates Alternative F as only the additional trips anticipated by the expansion of the facilities. Trip generation rates are shown in **Table 4.8-21**.

TABLE 4.8-21
ALTERNATIVE F TRIP GENERATION

Land Use	Quantity	Units	Friday	Friday PM Peak Hour			Saturday	Saturday PM Peak Hour		
			Daily	In	Out	Total	Daily	In	Out	Total
Casino	9,826	GFA	1,897	62	62	124	1,691	71	44	115
Event Center	174	sf								
<i>Subtotal Vehicle Trips</i>			1,897	62	62	124	1,691	71	44	115
Diverted Linked Trips – 0%										
Net New Project Trips			1,897	62	62	124	1,691	71	44	115
Notes: GFA = gaming floor area; sf = square feet Source: Kimley-Horn, 2018 (Appendix F).										

Trip Distribution

Due to the extensive regional roadway network surrounding the Win-River Casino Site, trips under Alternative F would be widely distributed. The trip distribution for the expansion of the existing Win-River Casino was estimated based on the location of the site and the surrounding land uses, as well as the existing traffic flow patterns. Trip generation for Alternative F is estimated as follows:

- Approximately 30 percent of project traffic would travel on I-5 north of South Bonnyview Road;
- Approximately 25 percent would travel on SR-273 north of Clear Creek Road;
- Approximately 20 percent would travel on SR-273 south of Redding Rancheria Road;
- Approximately 18 percent would travel on I-5 south of South Bonnyview Road;
- Approximately 3 percent would travel on Canyon Road west of Redding Rancheria Road;
- Approximately 2 percent would travel on Clear Creek Road west of SR-273; and
- Approximately 2 percent would travel on South Bonnyview Road east of I-5.

Site access is provided by SR-273 and Redding Rancheria Road to the Win-River Casino Site (**Appendix F**).

Traffic Conditions under Alternative F

To assess the impacts of the project on transportation facilities in the study area, the projected number of trips generated by Alternative F was added to the baseline conditions established in **Section 4.8.1**. **Table 4.8-22** displays peak hour intersection delay and LOS at each of the study intersections under Alternative F. Turning movements, traffic volumes, and warrant analysis at each of the study intersections under background plus Alternative F traffic conditions are provided within the TIS (**Appendix F**). As shown in **Table 4.8-22**, with the addition of traffic from Alternative F, no study intersections are projected to operate at an unacceptable LOS.

TABLE 4.8-22
BUILDOUT YEAR (2025) INTERSECTION LOS SUMMARY WITH ALTERNATIVE F

ID	Intersections	Control	LOS Target	Peak Hour	Buildout Year (2025)	
					Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	23.2	C
				Sat PM	17.2	B
11	Market St (SR-273) / Westwood Ave	Signal	D	Fri PM	12.7	B
				Sat PM	9.8	A
12	Market St (SR-273) / Clear Creek Rd	Signal	D	Fri PM	6.2	A
				Sat PM	5.4	A
13	Market St (SR-273) / Girvan Rd	Signal	D	Fri PM	15.0	B
				Sat PM	12.4	B
14	Market St (SR-273) / Redding Rancheria Rd	Signal	D	Fri PM	9.8	A
				Sat PM	8.6	A
15	Canyon Rd / Redding Rancheria Rd	Signal	D	Fri PM	11.9	B
				Sat PM	10.2	B
16	Market St (SR-273) / Happy Valley Rd	Signal	D	Fri PM	7.4	A
				Sat PM	6.3	A
Notes: All intersections meet current LOS target under buildout year (2025) conditions with Alternative F. Source: Kimlev-Horn, 2018 (Appendix F).						

Tables 4.8-23 and **4.8-24** summarizes the study roadway conditions under Alternative F. As shown in the table, all study roadway segments would operate under acceptable LOS at the buildout year with traffic from Alternative F.

Site Access

No changes to existing access are planned for the casino expansion under Alternative F; therefore, no impacts will occur to site access under Alternative F.

TABLE 4.8-23
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE F – TWO-LANE

Roadway Segment Number ¹	Roadway Segment	Peak Hour	Analysis Direction	LOS	PFFS (%)	v/c
3	Canyon Rd south of Redding Rancheria Rd	Fri PM	NB	B	85.0	0.15
			SB	B	84.6	0.24
		Sat PM	NB	B	86.8	0.15
			SB	B	86.9	0.14
Notes: PFFS = Percent Free-Flow Speed; v/c – volume to capacity ratio; NB = northbound; SB = southbound All intersections meet current LOS target under buildout year (2025) conditions with Alternative F. 1 – Refer to Figure 3.8-3 . Source: Kimley-Horn, 2018 (Appendix F).						

TABLE 4.8-24
BUILDOUT YEAR (2025) ROADWAY SEGMENT LOS SUMMARY WITH ALTERNATIVE F – MULTILANE

Roadway Segment Number	Roadway Segment	Peak Hour	Analysis Direction	LOS	Density (pc/mi/ln)
1	Market St (SR-273) north of Canyon Rd	Fri PM	NB	A	7.5
			SB	A	9.2
		Sat PM	NB	A	5.2
			SB	A	6.3
2	Market St (SR-273) south of Canyon Rd	Fri PM	NB	A	5.0
			SB	A	5.6
		Sat PM	NB	A	3.2
			SB	A	3.2
Notes: All intersections meet current LOS target under buildout year (2025) conditions with Alternative F. NB = northbound; SB = southbound 1 – Refer to Figure 3.8-3 . Source: Kimley-Horn, 2018 (Appendix F).					

Transit, Bicycle, and Pedestrian Facilities

The existing Win-River Casino relies on transit services to transport patrons to and from the Win-River Casino Site. Alternative F would not result in any disruptions or other changes to existing transit service.

4.8.8 ALTERNATIVE G – NO ACTION ALTERNATIVE

Traffic conditions under the No Action Alternative are characterized by the baseline conditions discussed in **Section 4.8.1**. No additional traffic would be added to the local intersections; therefore, no additional effects would occur under this alternative.

4.9 LAND USE

This section identifies the direct effects to land use that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.9**. Cumulative effects are identified in **Section 4.15**, while indirect effects associated with off-site construction and growth-inducement are identified in **Section 4.14**. Mitigation measures and Best Management Practices (BMPs), if warranted, are included in **Sections 5.0** and **2.3.2** respectively.

4.9.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

Alternative A would result in the removal of approximately 232 acres of land from Shasta County land use jurisdiction, which would be placed into federal trust for the Tribe. Once the property is taken into trust, the only applicable land use regulations would be federal or tribal. However, the Tribal Government desires to work cooperatively with local and state authorities on land use matters.

Land Use Plans

Planning documents currently in effect for the Strawberry Fields Site include the Shasta County General Plan (County General Plan) and the Shasta County Zoning Code. The majority of the Strawberry Fields Site is zoned by the County as Limited Agriculture (A-1), with a small sliver adjacent to the Sacramento River zoned as Designated Floodway (F-1); however, no development would occur in the F-1 zoned area. Alternative A would result in the development of a casino-resort and sporting goods retail store on the Strawberry Fields Site, and while these proposed uses on the Strawberry Fields Site are not consistent with allowable uses under existing zoning, they are compatible with surrounding land uses along the Interstate 5 (I-5) corridor (see *Land Use Compatibility* subsection below). Thus, while the proposed uses on the Strawberry Fields Site are not consistent with allowable uses under existing zoning, this inconsistency with existing zoning would not result in significant adverse land use effects.

Land Use Compatibility

Alternative A would include the development of a hotel, casino, sporting goods retail store, and ancillary facilities on the Strawberry Fields Site. These land uses would represent a significant change from the current undeveloped conditions on the site, and would differ from adjacent land uses. However, similar commercial development, such as the Hilton Gardens Inn, Burger King, Super 8 Motel, Chevron and Valero gas station, and other commercial facilities are present at the I-5 interchange at South Bonnyview Road.

Development of Alternative A has the potential to result in land use compatibility impacts with nearby sensitive receptors, as discussed in detail in the other topical sections of this Environmental Impact Statement (EIS). There are several rural residential receptors adjacent to the northern and southern site boundaries, and a residential neighborhood is located directly across the Sacramento River to the west.

Impacts resulting from construction/development of Alternative A may include, but are not limited to, air quality and noise effects from construction and operational activities (**Sections 4.4 and 4.11** respectively); traffic congestion (**Section 4.8**); and alteration of the visual resources and aesthetics of the surrounding neighborhood (**Section 4.13**). Implementation of mitigation measures identified in **Section 5.8** and BMPs and design features described in **Section 2.3.2** would reduce impacts to less-than-significant levels. Although Alternative A would differ from the surrounding rural residential and agricultural land uses, it would not disrupt neighboring land uses, prohibit access to neighboring parcels, or otherwise conflict with neighboring land uses.

Agricultural operations surrounding the Strawberry Fields Site could result in land use compatibility impacts with Alternative A associated with odor, dust, and noise from operation of farm equipment. However, the typical recommended minimum buffer between agricultural uses and sensitive receptors is 300 feet; Alternative A's structures are nearly 2,000 feet from the southern boundary of the Strawberry Fields Site, where the adjacent parcel's agricultural operations begin. Periodic dust and noise represent only a potentially minor annoyance for on-site customers; therefore, this is considered a less-than-significant impact.

Agriculture

The Strawberry Fields Site is not actively farmed, and as stated in **Section 3.9.3** and shown on **Figure 3.9-3**, does not contain any Farmland Mapping and Monitoring Program (FMMP) designated prime farmland, unique farmland, or farmland of local importance. The site received a Farmland Conversion Impact Rating (FCIR) score of 95, which is under the 160-point threshold for evaluation of alternative sites (**Appendix J**). The Strawberry Fields Site, currently designated for part-time agricultural use, would be converted to commercial use with implementation of Alternative A. As stated in **Section 3.9.3**, there are 2,462,080 acres of farmland in Shasta County. Alternative A, which would convert 37 acres, would result in a conversion of less than 0.002 percent of the farmland in the County. This represents a negligible conversion of farmland, and would be a less-than-significant impact.

Off-site Access Improvements

Alternative A would result in the construction of off-site access improvements. Two access improvement areas are under consideration: the North Access Improvement Area and the South Access Improvement Area.

Alternative A would not alter the land use designation of the North or South Access Improvement Areas. They would remain in their current state as roads and right-of-ways. There would be no change in land use and no significant impact to land use compatibility as a result of Alternative A development within the North Access Improvement Area. Additionally, no farming takes place in either Off-site Access Improvement Area, and no impact to agriculture would occur as a result of Alternative A.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal governmental uses. No exterior improvements or construction activities would occur, and there are no tribal land uses plans. Therefore, no impacts to land use would occur as a result of this component of Alternative A.

4.9.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Alternative B is similar to Alternative A in almost all aspects regarding land use effects, as the only difference is the lack of a large-scale sporting goods store. Refer to **Section 4.9.1** for a detailed discussion. Impacts associated with land use compatibility and conflicts, agriculture, and renovation of the existing casino would be less than significant.

4.9.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Alternative C is similar to Alternative A in almost all aspects regarding land use effects, but to a lesser scale. Refer to **Section 4.9.1** for a detailed discussion. Impacts associated with land use compatibility and conflicts, agriculture, and renovation of the existing casino would be less than significant.

4.9.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Alternative D is similar to Alternative A in almost all aspects regarding land use effects, but without a gaming component. Refer to **Section 4.9.1** for a detailed discussion. Impacts associated with land use compatibility and conflicts, and agriculture would be less than significant.

4.9.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Alternative E would result in the removal of approximately 55 acres of land from the City of Anderson's land use jurisdiction and placed into federal trust for the Tribe. Once the property is taken into trust, the only applicable land use regulations would be federal or tribal. However, the Tribal Government desires to work cooperatively with local and state authorities on land use matters.

Land Use Plans

Planning documents currently in effect for the Anderson Site include the Anderson General Plan. The Anderson Site is zoned by the City of Anderson for low-density residential development. Alternative E would result in the development of a casino-resort and sporting goods store on the Anderson Site, and while these proposed uses on the Anderson Site are not consistent with allowable uses under existing zoning, they are compatible with surrounding land uses along the I-5 corridor (see *Land Use Compatibility* subsection below). Thus, while the proposed uses on the Anderson Site are not consistent with allowable uses under existing zoning, this inconsistency with existing zoning would not result in significant adverse land use effects.

Land Use Compatibility

Alternative E would include the development of a hotel, casino, sporting goods store, and ancillary facilities on the Anderson Site. While the Anderson Site is vacant land, land uses in the vicinity include residential subdivisions and commercial development along the I-5 corridor.

Development of Alternative E has the potential to result in land use compatibility impacts with nearby sensitive receptors, as discussed in detail in the other topical sections of this EIS. Impacts resulting from construction/development of Alternative E may include, but are not limited to, air quality and noise effects from construction and operational activities (**Sections 4.4** and **4.11** respectively); traffic congestion (**Section 4.8**); and alteration of the visual resources and aesthetics of the surrounding neighborhood (**Section 4.13**). Implementation of mitigation measures identified in **Section 5.8** and BMPs and design features described in **Section 2.3.2** would reduce impacts to less-than-significant levels. Although Alternative E would differ from the surrounding rural and agricultural land uses, it would not disrupt neighboring land uses, prohibit access to neighboring parcels, or otherwise conflict with neighboring land uses.

Agriculture

No agricultural activities currently take place on the Anderson Site. As stated in **Section 3.9.3** and shown on **Figure 3.9-4**, there is no FMMP-designated prime farmland, unique farmland, or farmland of local importance on the Anderson Site. Alternative E would result in the direct conversion of approximately 25 acres of farmland on the 55-acre Anderson Site to a casino-resort facility, while the remaining 30 acres of the site would be used for a material borrow area and stormwater infiltration and storage. The completed FCIR form for Alternative E is provided in **Appendix J**. The Anderson Site received a total FCIR score of 23, which is less than the 160-point threshold for evaluation of alternative sites (**Appendix J**). Alternative E would convert 40 acres of the Anderson Site, which would result in conversion of less than 0.002 percent of the farmland in Shasta County. This is a negligible conversion of farmland, and would be a less-than-significant impact.

Renovation of Existing Casino for Tribal Governmental Uses

Alternative E is similar to Alternative A regarding renovation of the existing casino. Refer to **Section 4.9.1** for a detailed discussion. Impacts associated with renovating the existing casino would be less than significant.

4.9.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Alternative F involves improvements to the existing Win-River Casino. The Win-River Casino Site is located within an area that has previously been taken into trust by the federal government on behalf of the Tribe; as a result, local planning documents such as the County General Plan are not applicable to Alternative F. Additionally, a gaming facility is already present on the site. The proposed expansion

would not disrupt neighboring land uses. No agricultural operations or infrastructure is located on the site. Alternative F would have a less-than-significant effect on local land use conflicts and agriculture.

4.9.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, current land uses would continue to exist at all sites. No impacts associated with land use and agricultural resources would occur.

4.10 PUBLIC SERVICES

This section identifies the direct effects associated with public services that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.10**. Schools, libraries, and parks are discussed in **Section 4.7, Socioeconomic Conditions**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively. Best Management Practices (BMPs) and mitigation measures to mitigate or minimize adverse effects are presented in **Sections 2.3.2** and **5.10** respectively.

Assessment Criteria

An adverse effect would occur if project-related demands on public services would cause an exceedance of system capacities that result in significant effects to the physical environment.

4.10.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

The City of Redding’s General Plan Policy CDD1G states the following with respect to the provision of public services “Require annexation before services are provided by the City, except under extraordinary circumstances.” As discussed in more detail below, it is anticipated that the City may provide several public services to the project, which could include water supply service, wastewater service, and electricity. Once the property is taken into trust, local land use regulations would not apply, and neither the County (nor the City, should it pursue annexation of the site) would have land use jurisdiction. This would constitute extraordinary circumstances as described by the City’s General Plan Policy CDD1G. Therefore, it appears that the provision of public services to the site by the City would be in accordance with General Plan.

Water Supply

The projected average daily potable water demand for the development of the Strawberry Fields Site under Alternative A would be approximately 210,400 gallons per day (gpd) with maximum weekend demand estimated at 315,000 gpd and an average daily landscape irrigation demand of approximately 10,919 gpd (**Appendix B**). There are two options proposed to supply water to Alternative A, as described below.

Off-site Water Supply (Option 1)

Under Water Supply Option 1, the City of Redding’s (City’s) water supply system would be extended to the Strawberry Fields Site to serve Alternative A. Connecting the City’s water system would require construction of approximately 777 linear feet of piping from the casino to the connection point at the intersection of Bechelli Lane and the driveway leading west to 5170 Bechelli Lane. At this location, the new pipeline would connect to the City’s existing 24-inch water line. The City’s water system would also

provide required fire protection flows. There is sufficient capacity in the transmission line to serve Alternative A Water Supply Option 1 (**Appendix B**). As discussed in **Section 3.10**, the City's water supply system's total capacity is approximately 40,040 acre-feet per year (AFY). The demand on the system in 2015 (24,739 acre-feet [af]) was only 62 percent of the system's total capacity (40,040 af; City of Redding 2017e). The addition of approximately 221,319 gpd (247.99 AFY) in demand under Alternative A Water Supply Option 1 would be less than 1.0 percent of the total 2015 demand, and would constitute only 1.6 percent of the current 15,301 AFY surplus within the City's water supply. Following the implementation of Alternative A, the municipal water supply would still have a surplus of approximately 15,053 AFY. Because of the current magnitude of the surplus within the City's water supply and due to the relatively small amount of demand that Water Supply Option 1 would add compared to the existing baseline, Alternative A Water Supply Option 1 would not require the City to substantively alter their current surface water diversion practices or seek an additional surface water source.

Additionally, as described in **Section 3.10**, the City's Foothill Water Treatment Plant (WTP) has a treatment capacity of 24 million gallons per day (MGD) with expansion possibilities of up to 42 MGD and the Buckeye WTP has a capacity of 14 MGD (City of Redding, 2017e). The two WTPs have a combined treatment capacity of 38 to 56 MGD. The City's current water rights allow for a maximum annual diversion of 24.1 MGD of surface water (City of Redding, 2017e). As such, the WTPs have sufficient capacity and Alternative A Water Supply Option 1 would not require the City to substantively alter their treatment facilities. Thus, Alternative A would not have a significant impact on the City's water supply system, and no mitigation is necessary. Mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City. Environmental impacts of the construction of off-site pipelines are analyzed in **Section 4.14**.

On-site Water Supply (Option 2)

Under Water Supply Option 2, water for domestic use, emergency supply, and fire protection would be provided by groundwater wells on the Strawberry Fields Site. Recycled water from on-site wastewater treatment would be reused for indoor non-potable uses (such as toilet flushing) and for landscape irrigation. Because Alternative A Water Supply Option 2 involves no connections from the Strawberry Fields Site to the municipal water supply system or any off-site water supply infrastructure, it will have no impact on the City's water supply services. No mitigation is necessary. Potential impacts to groundwater and water resources from the construction and use of groundwater wells are discussed in **Section 4.3**.

Wastewater Service

The projected average daily wastewater flow for Alternative A would be approximately 200,300 gpd with peak weekend flows estimated at 289,600 gpd (Table 33 in **Appendix B**). As discussed in **Section 2.3**,

Alternative A has two wastewater treatment and disposal options: off-site (Wastewater Option 1) and on-site (Wastewater Option 2).

Off-site Wastewater Treatment and Disposal (Option 1)

Under Alternative A Wastewater Option 1, wastewater treatment would be provided by the City via a connection to the City's conveyance system and wastewater treatment plant (WWTP). Connection to the City's existing collection system would require the installation of a sewer lift station on the Strawberry Fields Site, and approximately 702 linear feet of sewer forcemain pipelines between the new on-site lift station located northwest of the casino and the existing City-operated Sunnyhill Lift Station, located at 5100 Bechelli Lane. From the Sunnyhill Lift Station, wastewater from Alternative A would be conveyed to the City's Clear Creek WWTP for treatment and disposal. A detailed description of the proposed wastewater conveyance facilities and connection to the City's system is provided in **Appendix B**.

According to the City of Redding 2012 Wastewater Utility Master Plan, the capacity of the Sunnyhill Lift Station is 17.21 MGD and in 2015, had a peak demand of 10.76 MGD, which indicates sufficient capacity for the approximately 0.2 MGD generated by Alternative A. The Clear Creek WWTP's average dry weather design flow is 9.4 MGD and peak wet weather flow is more than 40 MGD (City of Redding, 2016e2016e). In 2016, the Clear Creek WWTP had a dry weather flow of 7.0 MGD (Mitchell, 2017). Therefore, the Clear Creek WWTP has a remaining dry weather capacity of approximately 2.4 MGD, which indicates sufficient capacity for the approximately 0.2 MGD generated by Alternative A. As discussed in **Section 3.10.2**, the West Side Interceptor, just north of the Clear Creek WWTP, is currently at capacity and experiences localized overflow during storm events. As such, flows from Alternative A would contribute to unacceptable operating conditions at this facility. However, the City's planned interceptor expansion in 2022, will sufficiently increase capacity to serve Alternative A, and mitigation provided in **Section 5.10.1** requiring the construction of equalization storage would ensure that Alternative A does not contribute to capacity exceedances during 10-year, 24-hour storm events. All other conveyance pipelines are anticipated to have sufficient capacity. Therefore, Alternative A would have a less-than-significant impact on the City's sewer system and WWTP as there is sufficient capacity in the Sunnyhill Lift Station, conveyance pipelines, and Clear Creek WWTP to provide services for Alternative A. Additionally, mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City. Environmental impacts of the construction of off-site pipelines are analyzed in **Section 4.14**.

On-site Wastewater Treatment and Disposal (Option 2)

Under Wastewater Option 2, wastewater would be treated by an on-site WWTP, located immediately south of the casino and hotel structures (**Figure 2-8**). Tertiary treated reclaimed water from the on-site WWTP would be utilized for casino toilet flushing and landscape irrigation. The proposed WWTP is described in **Section 2.3.2** and detailed in **Appendix B**.

Because Alternative A Wastewater Option 2 involves no connections of the Strawberry Fields Site to the municipal wastewater system, it will have no impact on the City's wastewater services. No mitigation is necessary. Potential impacts to groundwater resources from operation of the on-site WWTP and leachfield under Wastewater Option 2 are discussed in **Section 4.3**.

Solid Waste Service

Construction

Construction of the casino, hotel, and other facilities under Alternative A would result in a temporary increase in solid waste generation. Potential solid waste streams from construction would include paper, wood, glass, aluminum, and plastics from packing materials; waste lumber; insulation; empty non-hazardous chemical containers; concrete; metal, including steel from welding/cutting operations; and electrical wiring.

Construction waste that cannot be recycled would be collected by Waste Management and disposed of at the Anderson Landfill or other permitted landfills that accept construction and demolition material. This impact would be temporary and would not be considered significant given that the landfill has an adequate capacity to accommodate the temporary increase in waste generated by the construction of Alternative A (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

As described in **Section 3.10**, the Strawberry Fields Site is located outside the City's service boundary; therefore, solid waste service would be provided by Waste Management, a private hauling company. This would require a private contract between Waste Management and the Tribe. Waste generated under Alternative A would be hauled appropriately to facilities described in **Section 3.10**.

The California Department of Resources Recycling and Recovery (CalRecycle) has established waste generation rates for the operation of different business types and residences. Based on the generation rates of similar gaming facilities, it is estimated that Alternative A would generate approximately 3.54 tons per day (tpd; 1,292 tons per year [tpy]) of solid waste (**Table 4.10-1**). Landscaping and maintenance staff would pick up trash that is left on the property. Decorative receptacles for trash and recycling would be placed strategically throughout the casino, hotel, and associated facilities to discourage littering. As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility. The Anderson Landfill has a permitted capacity of 1,850 tpd or 675,250 tpy, and has nearly 12 million cubic yards of available capacity. It has sufficient capacity to maintain operations through 2093 (CalRecycle, 2016). Daily solid waste from Alternative A would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill.

Therefore, operation of Alternative A would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

TABLE 4.10-1
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE A

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day)
Casino	3.12	lb / 100 sf / day	69,541 sf	2,170
Hotel	2.0	lb / room / day	250 rooms	500
Food and Beverage	0.005	lb / sf / day	30,565 sf	153
Conference/Event Center	3.12	lb / 100 sf / day	62,280 sf	1,943
Outdoor Amphitheater	3.12	lb / 100 sf / day	19,800 sf	618
Administrative/Back of House	3.12	lb / 100 sf / day	43,820 sf	1,367
Commercial Retail	2.5	lb / 1,000 sf / day	131,000 sf	328
Total lb/day				7,079
Total ton/day				3.54
Total ton/year				1,292
Notes: To be conservative, solid waste from the existing Win-River Casino was not subtracted from these figures. Source: CalRecycle, 2017.				

Law Enforcement

An analysis of the impact of casino gambling on local crime rates is included in **Section 4.7**. While there is no definitive link between casinos and crime, as with any commercial development it is anticipated that the increased concentration of people that Alternative A would bring to the Strawberry Fields Site would lead to an increase in the number of service calls to local law enforcement. However, the increase in calls would be at least partially offset by the closure of the existing casino.

In 1953, the State of California assumed partial jurisdiction over certain offenses occurring in Indian country pursuant to Public Law 83-280 (PL 280). As a consequence, the trust acquisition would result in changes in criminal jurisdiction on the Strawberry Fields Site dependent on whether victims or the accused are Native American. For future criminal matters at the casino consisting of crimes by non-Indians against other non-Indians, California would continue to exercise criminal jurisdiction. Additionally, Shasta County Sheriff's Office (SCSO) currently receives funds collected by the State of California for each gaming machine in the existing Win-River Casino in order to address off-reservation impacts to local communities, and would continue to receive these funds with the relocation of the casino to the Strawberry Fields Site.

It is anticipated that the Tribe will enter into an agreement for law enforcement services with the SCSO. SCSO would have the authority to enforce all non-gaming state criminal laws on the proposed trust lands pursuant to PL-280. A Tribal security force would provide security patrol and monitoring needs of the

casino as needed. Security cameras and security personnel would provide surveillance of the casino, parking areas, and surrounding grounds. Security guards would patrol the facilities to reduce and prevent criminal and civil incidents. Security guards would carry two-way radios to request and respond to back up or emergency calls. Tribal security personnel would work cooperatively with other law enforcement agencies. The need for SCSO assistance would likely be required only in situations where a serious threat to life or property is present, or if arrests are necessary. It is not anticipated that law enforcement services from the City will be required.

Because SCSO currently provide law enforcement services to the Strawberry Fields Site and the existing Win-River Casino (which would be closed under Alternative A), it is not anticipated that SCSO would require additional facilities to continue to provide services subsequent to the development of Alternative A. However, due to the potential for an increase in calls for service during operation of Alternative A at the Strawberry Fields Site, a potentially significant adverse effect could occur. With implementation of the on-site security measures and the mitigation and BMPs identified **Sections 5.10.3** and **2.3.2** respectively, impacts would be addressed and Alternative A would result in a less-than-significant effect on public law enforcement services.

Fire Protection and Emergency Medical Services

Construction

Construction may introduce potential sources of fire to the Strawberry Fields Site. During construction, equipment and vehicles may accidentally spark and ignite vegetation. Equipment used during grading and construction activities may also create sparks which could ignite dry grass on the site. This risk would be similar to that found at other construction sites. As described in **Section 2.3.2**, the Tribe will require construction contractors to clear construction areas of dried vegetation and to utilize spark arrestors in good working order to prevent accidental fires. With BMPs in **Section 2.3.2**, impacts would be less than significant.

Operation

It is anticipated that the Shasta County Fire Department (SCFD) and the California Department of Fire and Forestry (CAL FIRE) would provide fire suppression services and emergency medical services to the Strawberry Fields Site. The Redding Fire Department (RFD), SCFD, and CAL FIRE maintain a mutual/automatic aid agreement (City of Redding, 2016g). Development of Alternative A would create additional risks from fires and add to firefighting responsibilities in the area. Vegetation in and around the developed areas would be irrigated during dry months, thereby minimizing the risk of fire. Additionally, the timely detection of fires by individuals working in the casino, early intervention, and firebreaks created by driveways and roads would reduce the risk of fires. Pursuant to building code requirements included in the Tribal-State Compact, the casino structure would be constructed to meet either Shasta County's or the International Building Code (IBC; previously Uniform Building Code)

design requirements, and the facilities would be constructed to meet adequate fire flow requirements as discussed in **Section 4.3**.

According to the SCFD 2014 Master Plan, SCFD and CAL FIRE have experienced an increase in service demands and declining revenues. An increased call volume and increase in mandated training requirements has placed a burden on firefighters (SCFD, 2014). However, it is the mutual/automatic aid agreements between federal, state, and local firefighting resources, such as RFD, that allows SCFD to meet its objective of a cost effective approach to sharing resources and providing services per the 2014 Master Plan (SCFD, 2016). Alternative A would lead to an increase in the number of fire protection and emergency medical services calls to the Strawberry Fields Site, although this increase would be at least partially offset by the closure of the existing Win-River Casino. Due to the potential for an increase in calls for fire protection services during operation of Alternative A, a potentially significant impact to the SCFD and CAL FIRE could occur. Mitigation measures are provided in **Section 5.10.4** that would reduce impacts to less-than-significant levels.

Electricity and Natural Gas

Construction

As there are no underground utility lines at the Strawberry Fields Site, construction of Alternative A would not damage underground utilities. However, as described below, the North Access Improvement Area runs along nearby utility lines. As such, construction of the North Access Improvement Area could damage underground utilities. As described in **Section 2.3.2**, the Tribe will contact the Utility Notification Center, which notifies utility service providers to mark or stake the horizontal path of underground facilities, provide information about the facilities, and/or give clearance to dig. Therefore, impacts to underground utilities from construction will be less than significant. .

Operation

Electrical service is not currently available at the Strawberry Fields Site. Electrical service to the Strawberry Fields Site would be provided by Redding Rancheria Utility Corporation (RRUCO), which receives electricity via a contract with Redding Electric Utility (REU), as described in **Section 2.3**. Alternative A is projected to have a utility demand load of 2,840 kilovolt amperes (KVA) and a probable annual electrical consumption of 15,465,000 kilowatt hours (kWh) per year (DeVine, 2017). REU's overall peak demand has decreased in recent years; as such, REU has a greater capacity than demand and can absorb Alternative A's electrical demand without difficulty (Ross, 2017). The electrical connection would be made with existing REU electrical lines that run along the northern boundary of the Strawberry Fields Site. Electricity transmission improvements may require upgraded/expanded overhead wires between the Strawberry Fields Site and the REU electrical lines along the northern boundary. The substation determined to serve the Strawberry Fields Site would likely be the Moore Substation located approximately 2.5 miles west of the Strawberry Fields Site (Ross, 2017). The final determination regarding the need for facility upgrades will be made during the electrical service application process.

Natural gas service is not currently available at the site. As described in **Section 3.10.6**, the Tribe would contract with Pacific Gas and Electric Company (PG&E), a private service provider, to extend natural gas service to the Strawberry Fields Site. A PG&E natural gas mainline pipeline exists approximately 1,100 feet north of the Strawberry Fields Site at the southern edge of the Hilton Garden Inn parking lot (Perez, 2017). The maximum estimated natural gas demand under Alternative A is 13,000 cubic feet per hour (CFH; DeVine, 2017). PG&E has indicated that sufficient service capacity is available to provide natural gas to Alternative A (Perez, 2017). PG&E would likely connect Alternative A to the natural gas mainline pipeline via open trenching with 4-inch plastic piping, the same size and material of the existing mainline (Perez, 2017).

Implementation of Alternative A would result in a less-than-significant impact to electric and natural gas services and demand. BMPs are provided in **Section 2.3.2** to further reduce the energy demands of the project. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Strawberry Fields Site, as described in **Section 2.3.2**, to ensure adequate services for Alternative A. Any infrastructure improvements required by the development of Alternative A would abide by all California Environmental Quality Act (CEQA) regulations and other applicable federal, State, and local laws. The potential impacts of off-site electric and natural gas line connections are described in **Section 4.14** and are anticipated to be less than significant.

Off-site Access Improvements

Off-site access improvements may require relocation of utilities near the North Access Improvement Area and/or South Access Improvement Area, such as overhead electricity lines and telecommunication lines. Relocation of these lines could result in a temporary break in service to some homes and businesses in the area. However, these effects are common when upgrading and maintaining utility services, and potential service breaks would be temporary. Thus, development of the off-site access improvements under Alternative A would not yield any significant impacts to public services.

Off-site impacts from water supply, wastewater, electrical, and natural gas connections are analyzed in **Section 4.14**.¹

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal services and housing uses. The change in use of the existing Win-River Casino structures are anticipated to require water, wastewater, law enforcement, fire protection, medical emergency, electrical, and natural gas services at similar rates to what is currently utilized. Therefore, there would be no expected increase in demands on public services from the Win-River Casino Site.

¹ Please note that Water Supply Option 1 and Wastewater Option 1 require off-site improvements, but Water Supply Option 2 and Wastewater Option 2 do not.

4.10.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE Development at the Strawberry Fields Site

Water Supply

The projected average daily potable water demand for the development of the Strawberry Fields Site under Alternative B would be approximately 174,600 gpd with maximum weekend demand estimated at 267,400 gpd and an average daily landscape irrigation demand of approximately 7,935 gpd (**Appendix B**). As with Alternative A, Alternative B includes two water supply options, as described below.

Off-site Water Supply (Option 1)

As described under Alternative A, the City's water supply system would be extended to the Strawberry Fields Site under Alternative B Water Supply Option 1. Due to the reduced number of project components and the lower potable water demand, impacts to the City's water supply system under Alternative B would be the same as or slightly reduced relative to those identified under Alternative A. There is sufficient capacity in City's nearby water supply line to serve Alternative B Water Supply Option 1 (**Appendix B**), including potable and fire flow demand, as discussed in **Section 4.10.1**. Thus, Alternative B would not have a significant impact on the City's water supply system. However, mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City. Environmental impacts of the construction of off-site pipelines are analyzed in **Section 4.14**.

On-site Water Supply (Option 2)

As with Alternative A, Alternative B's Water Supply Option 2 would include the development of an on-site water supply system using on-site groundwater wells for domestic use, emergency supply, and fire protection. Under Water Supply Option 2, recycled water from on-site wastewater treatment would be reused for indoor non-potable uses (such as toilet flushing) and for landscape irrigation. The on-site system is detailed in **Appendix B**.

No off-site water supply infrastructure would be needed to supply water to Alternative B under Water Supply Option 2; therefore, no exceedance of water system capacities would occur that would result in significant effects to the physical environment. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed and the use of groundwater for on-site purposes would continue on the Strawberry Fields Site. Potential impacts to groundwater and water resources from the construction and use of groundwater wells are discussed in **Section 4.3**.

Wastewater Service

The projected average daily wastewater generation for Alternative B would be approximately 166,200 gpd with peak weekend flows estimated at 247,100 gpd (Table 3 in **Appendix B**). As with Alternative A,

Alternative B includes two wastewater treatment and disposal options: off-site (Wastewater Option 1) and on-site (Wastewater Option 2).

Off-site Wastewater Treatment and Disposal (Option 1)

Alternative B Wastewater Option 1 is identical to Alternative A Wastewater Option 1. As discussed in **Section 4.10.1**, the Sunnyhill Lift Station; conveyance pipelines, other than the West Side Interceptor; and the Clear Creek WWTP have sufficient capacity to handle flows from Alternative B (**Appendix B**). As such, Alternative B would have a less-than-significant impact with mitigation (provided in **Section 5.10.1**) on the City's sewer and WWTP. Additional mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Wastewater Treatment and Disposal (Option 2)

Wastewater Option 2 would differ from Alternative A in that with recycled water reuse, 36 acres of leach fields would be required under Alternative B (Table 12 of **Appendix B**). Because Alternative B Wastewater Option 2 involves no connections from the Strawberry Fields Site to the municipal wastewater system, it will have no impact on the City's wastewater services. No mitigation is necessary. Potential impacts to groundwater resources from operation of the on-site WWTP and leachfield under Wastewater Option 2 are discussed in **Section 4.3**.

Solid Waste Service

Construction

As with Alternative A, construction of the casino under Alternative B would result in a temporary increase in solid waste generation. Construction waste that cannot be recycled would be collected by Waste Management and disposed of at the Anderson Landfill, which accepts construction and demolition materials. This impact would be temporary and would not be considered significant given that the landfill has an adequate capacity to accommodate the increase in the amount of waste generated by the construction of Alternative B (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

As with Alternative A, Alternative B is located outside the City's solid waste service boundary; therefore, solid waste service would be provided by Waste Management, a private hauling company. This would require a private contract between Waste Management and the Tribe. Waste generated under Alternative B would be hauled appropriately to facilities described in **Section 3.10**.

Based on the generation rates of similar gaming facilities, it is estimated that Alternative B would generate approximately 3.38 tpd and 1,234 tpy of solid waste (**Table 4.10-2**). Landscaping and

maintenance staff would pick up any trash that is left on the property. Decorative receptacles for trash and recycling would be placed strategically throughout the casino, hotel, and associated facilities to discourage littering. As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility.

TABLE 4.10-2
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE B

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day)
Casino	3.12	lb / 100 sf / day	69,541 sf	2,170
Hotel	2.0	lb / room / day	250 rooms	500
Food and Beverage	0.005	lb / sf / day	30,565 sf	153
Conference/Event Center	3.12	lb / 100 sf / day	62,280 sf	1,943
Outdoor Amphitheater	3.12	lb / 100 sf / day	19,800 sf	618
Administrative/Back of House	3.12	lb / 100 sf / day	43,820 sf	1,367
Total lb/day				6,751
Total ton/day				3.38
Total ton/year				1,232
Notes: To be conservative, solid waste from the existing Win-River Casino was not subtracted from these figures. Source: CalRecycle, 2017.				

Daily solid waste from Alternative B would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill. Therefore, as with Alternative A, the operation of Alternative B would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

Law Enforcement

Impacts to law enforcement services associated with the operation of Alternative B would be similar to those identified for Alternative A, given the reduction in the size of facilities. With implementation of the on-site security measures discussed in **Section 4.10.1** and the BMPs and mitigation measures described in **Sections 2.3.2** and **5.10** respectively, including the service agreement with SCSO, impacts would be reduced and Alternative B would result in a less-than-significant effect to law enforcement services.

Fire Protection and Emergency Medical Services

Construction

As discussed in **Section 4.10.1**, construction may introduce potential sources of fire to the Strawberry Fields Site. This risk would be similar to that found at other construction sites. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

It is anticipated that the SCFD would provide fire suppression and emergency medical services to the Strawberry Fields Site under Alternative B. As discussed in **Section 4.10.1**, development of the casino structure would create additional risks from fires and add to firefighting responsibilities in the area. Due to the potential for an increase in calls for fire protection services during operation of Alternative B, a potentially significant impact to the SCFD could occur. With implementation of the mitigation discussed in **Section 5.10.4**, impacts would be addressed, and Alternative B would result in a less-than-significant effect on public fire protection services.

Alternative B would lead to an increase in the number of fire protection and emergency medical services calls to the Strawberry Fields Site, although this increase would be at least partially offset by the closure of the existing Win-River Casino. Due to the potential for an increase in calls for fire protection services during operation of Alternative B, a potentially significant impact to the SCFD could occur. With implementation of mitigation in **Section 5.10.4**, impacts would be addressed, and Alternative B would result in a less-than-significant effect on public fire protection services.

Electricity and Natural Gas

Construction

As there are no underground utility lines at the Strawberry Fields Site, construction of Alternative B would not damage underground utilities. However, as the North Access Improvement Area runs along nearby utility lines, construction of the North Access Improvement Area could damage underground utilities. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

As with Alternative A, electricity under Alternative B would be obtained from RRUCO, which receives electricity via a contract with REU and natural gas would be obtained from PG&E. Electric and natural gas demand under Alternative B would be similar to that of Alternative A. As such, it is anticipated both REU and PG&E will have sufficient electric and natural gas service capacity. As described in **Section 4.10.1**, electricity transmission improvements may require upgraded/expanded overhead wires between the Strawberry Fields Site and the REU electrical lines along the northern boundary. Further, a natural gas connection of approximately 1,100 feet would be necessary, as described in **Section 4.10.1**.

Implementation of Alternative B would result in a less-than-significant impact to electric and natural gas services and demand. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Strawberry Fields Site. Any infrastructure improvements required by the development of Alternative B would abide by all CEQA regulations and other applicable federal, State, and local laws. The potential impacts of off-site electric and natural gas line connections are described in **Section 4.14** and are anticipated to be less than significant.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative B would be very similar to those described under Alternative A.² Thus, development of the off-site access improvements under Alternative B would not yield any significant impacts to public services.

Renovation of Existing Casino for Tribal Governmental Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative B would not result in any significant impacts to public services.

4.10.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Development at the Strawberry Fields Site

Water Supply

The projected average daily potable water demand for the development of the Strawberry Fields Site under Alternative C would be approximately 200,300 gpd with maximum weekend demand estimated at 301,900 gpd and an average daily landscape irrigation demand of approximately 10,546 gpd (**Appendix B**). Under Water Supply Option 2, recycled water from on-site wastewater treatment would be reused for indoor non-potable uses (such as toilet flushing) and for landscape irrigation. As with Alternative A, Alternative C includes two water supply options, as described below.

Off-site Water Supply (Option 1)

As with Alternative A, the City's water supply system would be extended to the Strawberry Fields Site under Alternative C Water Supply Option 1. Due to the reduced number of project components and the lower potable water demand, impacts to the City's water supply system under Alternative C would be reduced relative to those identified under Alternative A. There is sufficient capacity in City's nearby water supply line to serve Alternative C Water Supply Option 1 (**Appendix B**). Thus, Alternative C would not have a significant impact on the City's water supply system. Additionally, mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Water Supply (Option 2)

As with Alternative A, Alternative C's Water Supply Option 2 would include the development of an on-site water supply system using on-site groundwater wells for domestic use, emergency supply, and fire protection. The on-site system is detailed in **Appendix B**.

² Please note that Water Supply Option 1 and Wastewater Option 1 require off-site improvements, but Water Supply Option 2 and Wastewater Option 2 do not.

No off-site water supply infrastructure would be needed to supply water to Alternative C under Water Supply Option 2; therefore, no exceedance of water system capacities would occur that would result in significant effects to the physical environment. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed and the use of groundwater for on-site purposes would continue on the Strawberry Fields Site. Potential impacts to groundwater and water resources from the construction and use of groundwater wells are discussed in **Section 4.3**.

Wastewater Service

The projected average daily wastewater generation for Alternative C would be approximately 190,700 gpd with peak weekend flows estimated at 277,450 gpd (Table 3 in **Appendix B**). As with Alternative A, Alternative C includes two wastewater treatment and disposal options: off-site (Wastewater Option 1) and on-site (Wastewater Option 2).

Off-site Wastewater Treatment and Disposal (Option 1)

Alternative C Wastewater Option 1 is identical to Alternative A Wastewater Option 1. As discussed in **Section 4.10.1**, the Sunnyhill Lift Station; conveyance pipelines, other than the West Side Interceptor; and the Clear Creek WWTP have sufficient capacity to handle flows from Alternative C (**Appendix B**). As such, Alternative C would have a less-than-significant impact with mitigation (provided in **Section 5.10.1**) on the City's sewer and WWTP. Additional mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Wastewater Treatment and Disposal (Option 2)

Wastewater Option 2 would differ from Alternative A in that with recycled water reuse, 42 acres of leach fields would be required under Alternative C (**Appendix B**, Table 12). Because Alternative C Wastewater Option 2 involves no connections from the Strawberry Fields Site to the municipal wastewater system, it will have no impact on the City's wastewater services. No mitigation is necessary. Potential impacts to groundwater resources from operation of the on-site WWTP and leachfield under Wastewater Option 2 are discussed in **Section 4.3**.

Solid Waste Service

Construction

As with Alternative A, construction of the casino under Alternative C would result in a temporary increase in solid waste generation. Construction waste that cannot be recycled would be collected by Waste Management and disposed of at the Anderson Landfill, which accepts construction and demolition materials. This impact would be temporary and would not be considered significant given that the landfill has an adequate capacity to accommodate the increase in the amount of waste generated by the construction of Alternative C (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce

the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

As with Alternative A, Alternative C is located outside the City's solid waste service boundary; therefore, solid waste service would be provided by Waste Management. This would require a private contract between Waste Management and the Tribe. Waste generated under Alternative C would be hauled appropriately to facilities described in **Section 3.10**.

Based on the generation rates of similar gaming facilities, it is estimated that Alternative C would generate approximately 3.22 tpd and 1,176 tpy of solid waste (**Table 4.10-3**). Landscaping and maintenance staff would pick up any trash that is left on the property. Decorative receptacles for trash and recycling would be placed strategically throughout the casino, hotel, and associated facilities to discourage littering. As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility.

TABLE 4.10-3
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE C

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day)
Casino	3.12	lb / 100 sf / day	56,412 sf	2,170
Hotel	2.0	lb / room / day	250 rooms	500
Food and Beverage	0.005	lb / seat / day	29,390 sf	153
Conference/Event Center	3.12	lb / 100 sf / day	62,280 sf	1,943
Outdoor Amphitheater	3.12	lb / 100 sf / day	19,800 sf	618
Administrative/Back of House	3.12	lb / 100 sf / day	36,893 sf	1,367
Commercial Retail	2.5	lb / 1,000 sf / day	131,000 sf	327
Total lb/day				6,446
Total ton/day				3.22
Total ton/year				1,176
Notes: To be conservative, solid waste from the existing Win-River Casino was not subtracted from these figures. Source: CalRecycle, 2017.				

Daily solid waste from Alternative C would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill. Therefore, as with Alternative A, the operation of Alternative C would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

Law Enforcement

Impacts to law enforcement services associated with the operation of Alternative C would be similar but reduced relative to those identified for Alternative A, given the reduction in the size of facilities. With

implementation of the on-site security measures discussed in **Section 4.10.1** and the mitigation measures and BMPs described in **Sections 5.10.3** and **2.3.2** respectively, including the service agreement with SCSO and/or Anderson Police Department (APD), impacts would be reduced and Alternative C would result in a less-than-significant to law enforcement services.

Fire Protection and Emergency Medical Services

Construction

As discussed in **Section 4.10.1**, construction may introduce potential sources of fire to the Strawberry Fields Site. This risk would be similar to that found at other construction sites. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

It is anticipated that the SCFD would provide fire suppression and emergency medical services to the Strawberry Fields Site under Alternative C. As discussed in **Section 4.10.1**, development of the casino structure would create additional risks from fires and add to firefighting responsibilities in the area. Due to the potential for an increase in calls for fire protection services during operation of Alternative C, a potentially significant impact to the SCFD could occur. With implementation of the mitigation discussed in **Section 5.10.4**, impacts would be addressed, and Alternative C would result in a less-than-significant effect on public fire protection services.

Alternative C would lead to an increase in the number of fire protection and emergency medical services calls to the Strawberry Fields Site, although this increase would be at least partially offset by the closure of the existing Win-River Casino. Due to the potential for an increase in calls for fire protection services during operation of Alternative C, a potentially significant impact to the SCFD could occur. With implementation of mitigation in **Section 5.10.4**, impacts would be addressed, and Alternative C would result in a less-than-significant effect on public fire protection services.

Electricity and Natural Gas

Construction

As there are no underground utility lines at the Strawberry Fields Site, construction of Alternative C would not damage underground utilities. However, as the North Access Improvement Area runs along nearby utility lines, construction of the North Access Improvement Area could damage underground utilities. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

As with Alternative A, electricity under Alternative C would be obtained from RRUCO, which receives electricity via a contract with REU and natural gas would be obtained from PG&E. Electric and natural gas demand under Alternative C would be less than Alternative A. As such, it is anticipated both REU and PG&E will have sufficient electric and natural gas service capacity. As described in **Section 4.10.1**, electricity transmission improvements may require upgraded/expanded overhead wires between the

Strawberry Fields Site and the REU electrical lines along the northern boundary. Further, a natural gas connection of approximately 1,100 feet would be necessary, as described in **Section 4.10.1**.

Implementation of Alternative C would result in a less-than-significant impact to electric and natural gas services and demand. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Strawberry Fields Site. Any infrastructure improvements required by the development of Alternative C would abide by all CEQA regulations and other applicable federal, State, and local laws. The potential impacts of off-site electric and natural gas line connections are described in **Section 4.14** and are anticipated to be less than significant.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative C would be very similar to those described under Alternative A.³ Thus, development of the off-site access improvements under Alternative C would not yield any significant impacts to public services.

Renovation of Existing Casino for Tribal Governmental Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative C would not result in any significant impacts to public services.

4.10.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Development at the Strawberry Fields Site

Water Supply

The projected average daily potable water demand for the development of the Strawberry Fields Site under Alternative D would be approximately 72,800 gpd with maximum weekend demand estimated at 77,894 gpd, and an average daily landscape irrigation demand of approximately 5,094 gpd (**Appendix B**). Under Water Supply Option 2, recycled water from on-site wastewater treatment would be reused for indoor non-potable uses (such as toilet flushing) and for landscape irrigation. As with Alternative A, Alternative D includes two water supply options, as described below.

Off-site Water Supply (Option 1)

As with Alternative A, the City's water supply system would be extended to the Strawberry Fields Site under Alternative D Water Supply Option 1. Due to the reduced number of project components and the lower potable water demand, impacts to the City's water supply system under Alternative D would be reduced relative to those identified under Alternative A. There is sufficient capacity in City's nearby water supply line to serve Alternative DD Water Supply Option 1 (**Appendix B**). Thus, Alternative D

³ Please note that Water Supply Option 1 and Wastewater Option 1 require off-site improvements, but Water Supply Option 2 and Wastewater Option 2 do not.

would not have a significant impact on the City's water supply system. Additionally, mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Water Supply (Option 2)

As with Alternative A, Alternative D's Water Supply Option 2 would include the development of an on-site water supply system using on-site groundwater wells for domestic use, emergency supply, and fire protection. The on-site system is detailed in **Appendix B**.

No off-site water supply infrastructure would be needed to supply water to Alternative D under Water Supply Option 2; therefore, no exceedance of water system capacities would occur that would result in significant effects to the physical environment. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed and the use of groundwater for on-site purposes would continue on the Strawberry Fields Site. Potential impacts to groundwater and water resources from the construction and use of groundwater wells are discussed in **Section 4.3**.

Wastewater Service

The projected average daily wastewater generation for Alternative D would be approximately 69,300 gpd with peak weekend flows estimated at 91,000 gpd (Table 3 in **Appendix B**). As with Alternative A, Alternative D includes two wastewater treatment and disposal options: off-site (Wastewater Option 1) and on-site (Wastewater Option 2).

Off-site Wastewater Treatment and Disposal (Option 1)

Alternative D Wastewater Option 1 is identical to Alternative A Wastewater Option 1. As discussed in **Section 4.10.1**, the Sunnyhill Lift Station; conveyance pipelines, other than the West Side Interceptor; and the Clear Creek WWTP have sufficient capacity to handle flows from Alternative D (**Appendix B**). As such, Alternative D would have a less-than-significant impact with mitigation (provided in **Section 5.10.1**) on the City's sewer and WWTP. Additional mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Wastewater Treatment and Disposal (Option 2)

Wastewater Option 2 would differ from Alternative A in that with recycled water reuse, 16 acres of leach fields would be required under Alternative D (**Appendix B**, Table 12). Because Alternative D Wastewater Option 2 involves no connections from the Strawberry Fields Site to the municipal wastewater system, it will have no impact on the City's wastewater services. No mitigation is necessary. Potential impacts to groundwater resources from operation of the on-site WWTP and leachfield under Wastewater Option 2 are discussed in **Section 4.3**.

Solid Waste Service

Construction

As with Alternative A and B, construction of the casino under Alternative D would result in a temporary increase in solid waste generation. Construction waste that cannot be recycled would be collected by Waste Management and disposed of at the Anderson Landfill, which accepts construction and demolition materials. This impact would be temporary and would not be considered significant given that the landfill has an adequate capacity to accommodate the increase in the amount of waste generated by the construction of Alternative D (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

As described in **Section 3.10**, the Strawberry Fields Site is located outside the City's service boundary; therefore, solid waste service would be provided by Waste Management. This would require a private contract between Waste Management and the Tribe. Waste generated under Alternative D would be hauled appropriately to facilities described in **Section 3.10**.

Based on the generation rates of similar gaming facilities, it is estimated that Alternative D would generate approximately 0.31 tpd or 112 tpy of solid waste (**Table 4.10-4**). Landscaping and maintenance staff would pick up any trash that is left on the property. Decorative receptacles for trash and recycling would be placed strategically throughout the restaurants, hotel, and associated facilities to discourage littering. As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility. Daily solid waste from Alternative D would represent approximately 0.0002 percent of the daily capacity of the Anderson Landfill.

TABLE 4.10-4
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE D

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day)
Hotel	2.0	lb / room / day	128 rooms	256
Food and Beverage	0.005	lb / seat / day	11,128 sf	56
Commercial Retail	2.5	lb / 1,000 sf / day	121,000 sf	302
Total lb/day				614
Total ton/day				0.31
Total ton/year				112
Notes: To be conservative, solid waste from the existing Win-River Casino was not subtracted from these figures. Source: CalRecycle, 2017.				

Therefore, as with Alternatives A and B, the operation of Alternative D would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

Law Enforcement

Impacts to law enforcement services associated with the operation of Alternative D would be similar but reduced relative to those identified for Alternative A, given the reduction in the size of facilities. With implementation of the on-site security measures discussed in **Section 4.10.1** and the mitigation measures and BMPs described in **Sections 5.10.3** and **2.3.2** respectively, including the service agreement with SCSO and/or APD, impacts would be reduced and Alternative D would result in a less-than-significant effect to law enforcement services.

Fire Protection and Emergency Medical Services***Construction***

As discussed in **Section 4.10.1**, construction may introduce potential sources of fire to the Strawberry Fields Site. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

It is anticipated that the SCFD would provide fire suppression and emergency medical services to the Strawberry Fields Site under Alternative D. Due to the potential for an increase in calls for fire protection services during operation of Alternative D, a potentially significant impact to the SCFD could occur. With implementation of the mitigation discussed in **Section 5.10.4**, impacts would be addressed, and Alternative D would result in a less-than-significant effect on public fire protection services.

Alternative D would lead to an increase in the number of fire protection and emergency medical services calls to the Strawberry Fields Site. Due to the potential for an increase in calls for fire protection services during operation of Alternative D, a potentially significant impact to the SCFD could occur. With implementation of mitigation in **Section 5.10.4**, impacts would be addressed, and Alternative D would result in a less-than-significant effect on public fire protection services.

Electricity and Natural Gas***Construction***

As there are no underground utility lines at the Strawberry Fields Site, construction of Alternative D would not damage underground utilities. However, as the North Access Improvement Area runs along nearby utility lines, construction of the North Access Improvement Area could damage underground utilities. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

As with Alternative A, electricity under Alternative D would be obtained from RRUCO, which receives electricity via a contract with REU and natural gas would be obtained from PG&E. Electric and natural gas demand under Alternative D would be similar to that of Alternative A. As such, it is anticipated both REU and PG&E will have sufficient electric and natural gas service capacity. As described in **Section 4.10.1**, electricity transmission improvements may require upgraded/expanded overhead wires between

the Strawberry Fields Site and the REU electrical lines along the northern boundary. Further, a natural gas connection of approximately 1,100 feet would be necessary, as described in **Section 4.10.1**.

Implementation of Alternative D would result in a less-than-significant impact to electric and natural gas services and demand. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Strawberry Fields Site. Any infrastructure improvements required by the development of Alternative D would abide by all CEQA regulations and other applicable federal, State, and local laws. The potential impacts of off-site electric and natural gas line extensions are described in **Section 4.14** and are anticipated to be less than significant.

Off-site Access Improvements

Impacts from the off-site access improvements under Alternative D would be very similar to those described under Alternative A.⁴ Thus, development of the off-site access improvements under Alternative D would not yield any significant impacts to public services.

4.10.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Development at the Anderson Site

Water Supply

The projected average daily water demand for the development of the Anderson Site under Alternative E would be approximately 203,800 gpd with maximum weekend demand estimated at 306,300 gpd and an average daily landscape irrigation demand of approximately 10,311 gpd (**Appendix B**). Under Water Supply Option 2, recycled water from on-site wastewater treatment would be reused for indoor non-potable uses (such as toilet flushing) and for landscape irrigation. As with Alternative A, Alternative E includes two water supply options, as described below.

Off-site Water Supply (Option 1)

Under Water Supply Option 1, the City of Anderson's municipal water supply system would be extended to the Anderson Site to serve Alternative E. An existing 12-inch City water line parallels the northern property line and serves residences to the west of the Anderson Site (**Appendix B**). The City Water System Master Plan includes plans to construct a 12-inch water pipe south, through the Anderson Site, to serve residences to the south and provide better City-wide pressures and flows. Working with the City of Anderson, the alignment of the new 12-inch waterline could be planned to accommodate Alternative E (**Appendix B**). This proposed pipeline would connect to the City of Anderson's existing 12-inch water line at the northeast to an existing 10-inch water line along the Anderson Site's southeast border.

The City of Anderson's municipal water supply system has sufficient capacity, pressure, and ability to supply Alternative E with potable water and fire protection flow (**Appendix B**). Further, the City of

⁴ Please note that Water Supply Option 1 requires off-site improvements, but Water Supply Option 2 does not.

Anderson's groundwater supply will be sufficient to meet projected demand even during multiple dry year events (City of Anderson, 2015a). As discussed in **Section 3.10.1**, the City of Anderson's 10 municipal supply groundwater wells have a combined capacity of 10,700 AFY, and in 2015 combined demand was only 2,150 af (City of Anderson, 2015a). A service utility agreement would be required and the City of Anderson will require a master meter be installed in order to track water usage and bill accordingly.

Because of the current magnitude of the surplus within the City of Anderson water supply and due to the relatively small amount of demand that Water Supply Option 1 would add compared to the existing baseline, Alternative E Water Supply Option 1 would not require the City of Anderson to substantively alter their current surface water diversion practices or seek an additional surface water source. Thus, Alternative E would not have a significant impact on the City of Anderson's water supply system. Additionally, mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

On-site Water Supply (Option 2)

Under Water Supply Option 2, water for domestic use, emergency supply, and fire protection would be provided by a groundwater well on the Anderson Site, located just west of the casino. It is anticipated that a single well drilled to a depth of 300 to 600 feet would be sufficient to supply both the average daily and peak hour water demands of Alternative E. (**Appendix B**).

No off-site water supply infrastructure would be needed to supply water to Alternative E under Water Supply Option 2; therefore, no exceedance of water system capacities would occur that would result in significant effects to the physical environment. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed. Potential impacts to groundwater and water resources from the construction and use of groundwater wells are discussed in **Section 4.3**.

Wastewater Service

The projected average daily wastewater generation for Alternative E would be approximately 194,100 gpd with peak weekend flows estimated at 281,800 gpd (Table 3 in **Appendix B**). On-site surface and/or subsurface disposal is not possible due limited available acreage (**Appendix B**). With recycled water reuse, approximately 42 acres would be required to accommodate the required sub-surface disposal design, however there are only 8 acres available for sub-surface or surface disposal on the Anderson Site (**Appendix B**, Table 12).

Therefore, under Alternative E, wastewater treatment would be provided by the City of Anderson via connection to the City's conveyance system and the Anderson Water Pollution Control Plant. The City of Anderson's nearest sewer pipeline, a 21-inch sewer trunk line, is aligned with the Tormey Drain through the Anderson Site (**Figure 2-5**). There is sufficient capacity in the 21-inch trunk line to accept the

Casino's wastewater flow (**Appendix B**). Wastewater from Alternative E will enter the sewer system at manhole D310M, which has a current peak wet weather flow of 1.39 MGD and a capacity of 3.54 MGD. Further, the existing 2.0 MGD Anderson Water Pollution Control Plant (Anderson WWTP) also has sufficient capacity to serve the estimated daily wastewater generation from Alternative E, as the plant currently treats only 1.1 MGD (**Appendix B**). The existing sewer pipeline is 9.5-feet deep. Because there are no sub-surface structures such as basements included as part of Alternative E, this depth will be sufficient to allow for gravity sewer flow from the Anderson Site. This avoids the need for a lift station to serve Alternative E (**Appendix B**).

As the Anderson WWTP and associated conveyance pipelines have sufficient capacity to handle flows from Alternative E (**Appendix B**), Alternative E would have a less-than-significant impact on the City of Anderson's sewer system and WWTP. Additionally, mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

Solid Waste Service

Construction

Construction under Alternative E would result in a temporary increase in solid waste generation. Construction waste that cannot be recycled would be collected by a hauling company and disposed of at the Anderson Landfill, which accepts construction and demolition materials. This impact would be temporary and would not be considered significant given that the landfill has an adequate capacity to accommodate the increase in the amount of waste generated by the construction of Alternative E (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

As described in **Section 3.10**, the Anderson Site is located within the service boundaries of the City of Anderson, where service is provided by Waste Management. This would require a private contract between Waste Management and the Tribe. Waste generated under Alternative E would be hauled appropriately to facilities described in **Section 3.10**.

Due to the similarities in size and design of Alternative A, solid waste services described in Alternative E would be the same as Alternative A. Based on the generation rates of similar gaming facilities, it is estimated that Alternative E would generate approximately 3.53 tpd and 1,288 tpy of solid waste (**Table 4.10-5**). As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility. Daily solid waste from Alternative E would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill.

TABLE 4.10-5
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE E

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day)
Casino	3.12	lb / 100 sf / day	69,542 sf	2,170
Hotel	2.0	lb / room / day	250 rooms	500
Food and Beverage	0.005	lb / sf / day	30,565 sf	153
Conference/Event Center	3.12	lb / 100 sf / day	62,280 sf	1,943
Outdoor Amphitheater	3.12	lb / 100 sf / day	19,800 sf	618
Administrative/Back of House	3.12	lb / 100 sf / day	43,820 sf	1,367
Commercial Retail	2.5	lb / 1,000 sf / day	121,000 sf	302
Total lb/day				7,053
Total ton/day				3.53
Total ton/year				1,287
Notes: To be conservative, solid waste from the existing Win-River Casino was not subtracted from these figures. Source: CalRecycle, 2017.				

Operation of Alternative E would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

Law Enforcement

An analysis of the impact of casino gambling on local crime rates is included in **Section 4.7**.

It is anticipated that the Tribe will enter into an agreement for law enforcement services with the APD. APD would have the authority to enforce all non-gaming state criminal laws on the proposed trust lands pursuant to PL-280. A Tribal security force would provide security patrol and monitoring needs of the casino as needed. Security cameras and security personnel would provide surveillance of the casino, parking areas, and surrounding grounds. Security guards would patrol the facilities to reduce and prevent criminal and civil incidents. Security guards would carry two-way radios to request and respond to back up or emergency calls. Tribal security personnel would work cooperatively with other law enforcement agencies. The need for APD assistance would likely be required only in situations where a serious threat to life or property is present, or if arrests are necessary.

APD may require additional facilities, equipment, and staffing to meet the increased need for services under Alternative E. Also, due to the potential for an increase in calls for service during operation of Alternative E, a potentially significant adverse effect could occur. With implementation of the on-site security measures and the mitigation and BMPs discussed in **Sections 5.10.3** and **2.3.2** respectively, impacts would be addressed, and Alternative E would result in a less-than-significant effect on public law enforcement services.

Fire Protection and Emergency Medical Services

Construction

Construction of Alternative E may introduce potential sources of fire to the Anderson Site. BMPs presented in **Section 2.3.2** would reduce impacts to less-than-significant levels.

Operation

It is anticipated that the Anderson Fire Department (AFD) would provide fire suppression and emergency medical services to the Anderson Site. As discussed in **Section 4.10.1**, development of the casino structure would create additional risks from fires and add to firefighting responsibilities in the area. Due to the potential for an increase in calls for fire protection services during operation of Alternative E, a potentially significant impact to the AFD could occur. With implementation of the mitigation discussed in **Section 5.10.4**, impacts would be addressed, and Alternative E would result in a less-than-significant effect on public fire protection services.

Alternative E would lead to an increase in the number of fire protection and emergency medical services calls to the Anderson Site, although this increase would be at least partially offset by the closure of the existing Win-River Casino. Due to the potential for an increase in calls for fire protection services during operation of Alternative E, a potentially significant impact to the AFD could occur. With implementation of mitigation in **Section 5.10.4**, impacts would be addressed, and Alternative E would result in a less-than-significant effect on public fire protection services.

Electricity and Natural Gas

Construction

As there are no underground utility lines at the Anderson Site, construction of Alternative E would not damage underground utilities.

Operation

Electrical service is not currently available at the Anderson Site. As described in **Section 3.10.6**, electricity for the Anderson Site would be obtained from PG&E. The maximum estimated electrical demand under Alternative E is likely similar to that of Alternative A and PG&E has indicated that sufficient service capacity is available to provide electricity to Alternative E (Perez, 2017). PG&E maintains an electric junction box approximately 300 feet north of the Anderson Site along the southern boundary of the Camping World Redding property (Perez, 2017). The junction box has the capacity for a three-phase power connection, which is typically suitable for large commercial development (Perez, 2017). The final determination regarding the need for facility upgrades will be made during the application process. BMPs in **Section 2.3.2** would reduce this impact to a less-than-significant level.

Natural gas service is not currently available at the Anderson Site. As described in **Section 3.10.6**, the Tribe would contract with PG&E to extend natural gas service to the Anderson Site. A PG&E natural gas

mainline pipeline exists approximately 300 feet north of the Anderson Site at the southern edge of the Camping World of Redding property (Perez, 2017). The maximum estimated natural gas demand under Alternative E is likely similar to that of Alternative A and PG&E has indicated that sufficient service capacity is available to provide natural gas to Alternative E (Perez, 2017). PG&E has indicated that it may be possible to open-trench electrical and natural gas connection lines jointly from the Anderson Site to the junction box and natural gas mainline pipeline (Perez, 2017) north of the Anderson Site. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Anderson Site. The potential impacts of off-site electric and natural gas line extensions are described in **Section 4.14** and are anticipated to be less than significant.

Implementation of Alternative E would result in a less-than-significant impact to electric and natural gas services and demand. The Tribe would be required to pay a fair share of the improvement costs necessary to provide electric and natural gas service at the Anderson Site, which is included as part of the project description in **Section 2.7.8**, to further reduce energy demand and ensure adequate services for Alternative E. Any infrastructure improvements required by the development of Alternative E would abide by all CEQA regulations and other applicable federal, State, and local laws. The potential impacts of off-site electric and natural gas line connections are described in **Section 4.14** and are anticipated to be less than significant.

Renovation of Existing Casino for Tribal Governmental Uses

Similar to Alternative A, renovation of the existing Win-River Casino under Alternative E would not result in any significant impacts to public services.

4.10.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Water Supply

Under Alternative F, the City would continue to provide water service to the Win-River Casino Site. The estimated average increase in wastewater generation as a result of Alternative F would be approximately 4,000 gpd with a weekend peak demand increase of approximately 6,000 gpd (**Appendix B**).

Under Alternative F, it is assumed that some minor upsizing of existing facilities may be required. However, the total calculated increase in water demand from Alternative F is less than eight percent, so it is expected that existing systems will be sufficient (**Appendix B**). This will be determined during final design. The City has indicated that it has the water supply capacity to serve Alternative F, as discussed in **Section 4.10.1 (Appendix B)**. As such, Alternative F would have a less-than-significant impact on the City's municipal water supply. Additionally, mitigation measures related to cumulative impacts associated with water supply services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

Wastewater Service

The City would continue to provide wastewater service for Alternative F as it currently does for the existing Win-River Casino. Pursuant to Section 2 of the 2012 Master Service Agreement between the City and the Tribe, payment for sewer service is made on a per-use basis. The estimated average daily wastewater generation as a result of Alternative F would be approximately 4,000 gpd greater than existing flows for a combined total of 52,600 gpd, with a weekend peak generation of an approximately 6,000 gpd increase over existing flows, for a combined total of 81,900 gpd (**Appendix B**, Table 6). Under Alternative F, it is assumed that some minor upsizing of existing pipelines may be required. However, the total calculated increase in wastewater demand from Alternative F is less than eight percent, so it is possible that existing systems will be sufficient (**Appendix B**). Additionally, pending the proposed West Side Interceptor expansion described in **Section 4.10.1**, conveyance pipelines and the Clear Creek WWTP would have sufficient capacity to handle minimally increased flows from Alternative F (**Appendix B**). As such, the impact to the City's wastewater service would be less than significant. Additionally, mitigation measures related to cumulative impacts associated with wastewater treatment services are provided in **Section 5.10.1** that would further reduce potential effects by requiring that the Tribe enter into a service agreement with the City.

Solid Waste Service

Construction

As with Alternative A and B, construction of the casino under Alternative F would result in a temporary increase in solid waste generation. Construction waste that cannot be recycled would be collected by a hauling company and disposed of at Anderson Landfill. This impact would be temporary and would not be considered significant given that the Anderson Landfill has an adequate capacity to accommodate the increase in the amount of waste generated by the construction of Alternative F (CalRecycle, 2016). BMPs are presented in **Section 2.3.2** to further reduce the amount of construction and demolition materials disposed of at the landfill and ensure impacts remain less than significant.

Operation

The Win-River Casino Site has an existing agreement with a private hauling company for solid waste services. It is anticipated the agreement would continue under Alternative F. Waste generated under Alternative F would be hauled appropriately to facilities described in **Section 3.10**.

Based on the generation rates of similar gaming facilities, it is estimated that the expansion of the Win-River Casino would generate an additional 0.16 tpd or 58 tpy of solid waste (**Table 4.10-6**). As discussed above, waste that cannot be recycled will be disposed of at the Anderson Landfill or another permitted facility. Additional daily solid waste from Alternative F would represent approximately 0.00009 percent of the daily capacity of the Anderson Landfill.

TABLE 4.10-6
ESTIMATED SOLID WASTE DISPOSAL – ALTERNATIVE F

Waste Generation Source	Waste Generation Rate	Units	Value	Total Waste (lb/day) ¹
Casino	3.12	lb / 100 sf / day	9,826 sf	307
Conference/Event Center	3.12	lb / 100 sf / day	174 sf	5.4
Total lb/day				312
Total ton/day				0.16
Total ton/year				58
Notes: 1 - Includes only additional square footage/solid waste per use type under Alternative F. Source: CalRecycle, 2017.				

Therefore, as with Alternative A, the operation of Alternative F would not result in significant effects on solid waste services. BMPs are presented in **Section 2.3.2** to further reduce the amount of solid waste disposed of at the landfill and ensure impacts remain less than significant.

Law Enforcement

As described in **Section 3.10.4**, law enforcement services, including prosecution, court, and jail services, under Alternative F would be continue to be provided by the SCSO with assistance from the RPD per their partnership agreement. A Tribal security force would continue to provide security patrol and monitoring needs of the casino facility. Tribal security personnel would continue to work cooperatively with the RPD and SCSO. The need for RPD or SCSO assistance would likely be required only in situations in which there were a serious threat to life and property and during which arrests would be made.

RPD and/or SCSO may require additional facilities, equipment, and staffing to meet the increased need for services under Alternative F, though, like Alternative A, the increase is expected to be minimal. Additionally, it is anticipated that the SCSO would continue to receive funds from the State of California collected from gaming machines. However, due to the potential for an increase in calls for service during operation of Alternative F, a potentially significant adverse effect could occur. With implementation of the on-site security measures and the mitigation and BMPs discussed in **Section 5.10.3** and **2.3.2** respectively, impacts would be addressed, and Alternative F would result in a less-than-significant impact on public law enforcement services.

Fire Protection and Emergency Medical Services

Construction

As discussed in **Section 4.10.1**, construction may introduce potential sources of fire to the Win-River Casino Site. This risk would be similar to that found at other construction sites and is considered potentially significant. BMPs are presented in **Section 2.3.2** to reduce this potential impact to a less-than-significant level.

Operation

As described in **Section 3.10.5**, it is anticipated that fire protection and emergency medical services would continue to be provided by SCFD. Due to the potential for an increase in calls for fire protection services during operation of Alternative F, a potentially significant impact to the SCFD could occur. With implementation of mitigation in **Section 5.10.4**, impacts would be addressed, and Alternative F would result in a less-than-significant effect on public fire protection services.

Electricity and Natural Gas***Construction***

Construction on the Win-River Casino Site could damage any existing underground utilities, leading to outages and/or serious injury. This would result in an adverse effect. BMPs are presented in **Section 2.3.2** to reduce impacts to less than significant.

Operation

Under Alternative F, the Win-River Casino Site would continue to obtain power from REU. Similarly, it is anticipated that under Alternative F, the Win-River Casino Site would continue to obtain natural gas service from PG&E. Both REU and PG&E have indicated there is sufficient service capacity for Alternative F (Ross, 2017; Perez, 2017).

As with Alternative A, implementation of Alternative F would result in a less-than-significant impact to electricity and natural gas services. Nonetheless, BMPs have been identified in **Section 2.3.2** to further reduce energy demand and ensure adequate services for Alternative F.

4.10.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, neither the Strawberry Fields Site nor the Anderson Site would be taken into trust and no development would occur on any of the alternative sites in the near future. No change in land use would occur, and all alternative sites would remain in their current state. No expansion would occur on the Win-River Casino Site. No significant effects to existing public services would occur.

4.11 NOISE

This section identifies the direct effects associated with noise that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.11**. Cumulative and indirect effects are identified in **Section 4.15** and **Section 4.14**, respectively. Best Management Practices (BMPs) and mitigation measures to minimize adverse effects identified in this section are presented in **Sections 2.3.2** and **5.11** respectively.

Assessment Criteria

Because neither the municipal codes nor the general plans of the City of Redding or Shasta County include construction noise level standards, the federal construction noise standard is used to evaluate impacts associated with construction noise impacts. The assessment of project effects is based on federal construction noise thresholds and Noise Abatement Criteria (NAC) standards used by the Federal Highway Administration (FHWA; see **Tables 3.11-3** and **3.11-4**). Adverse noise-related effects may occur if: 1) project construction causes the ambient noise environment to exceed 78.0 A-weighted decibels (dBA) equivalent noise level (Leq) at sensitive receptors locations, or 2) project implementation causes the ambient noise environment to exceed 67.0 dBA Leq at sensitive receptor locations including residential housing in the vicinity of the alternative sites.

If the existing ambient noise level is greater than the significance thresholds discussed above, significance will be evaluated based on if the project audibly increases (3.0 dBA Leq) the ambient noise level at sensitive receptor locations. As discussed in **Section 3.11**, a 3.0 dBA increase in noise is barely perceivable; therefore, an increase in the ambient noise level of 3.0 dBA would be considered significant if existing noise levels exceed the significance thresholds.

As described in **Section 2.0**, Alternatives A through D involve substantial alterations to Bechelli Lane under Site Access Option 1 and to both Bechelli Lane and Adra Way under Site Access Option 2. Because these roadway improvements would occur off site, noise impacts associated with increased traffic volumes on Bechelli Lane and on Adra Way are evaluated based on the roadway improvement project noise standards described in the Noise Elements of the City of Redding General Plan (City of Redding, 2000) and the Shasta County General Plan (Shasta County, 2004). Refer to **Section 3.11.2** and **Table 3.11-6** for a detailed description of these standards. Additionally, an independent traffic noise analysis was performed for the two road segments comprising the Off-site Access Improvement Areas, which is included in **Appendix G**. Noise impacts associated with increased traffic volumes on all other road segments are evaluated based on the FHWA NAC standards.

The assessment of vibration noise is based on the Federal Transportation Administration (FTA) standards of 90 VdB (velocity expressed in decibels) for structural damage and 70 VdB for annoyance of people (FTA, 2006).

4.11.1 ALTERNATIVE A – PROPOSED PROJECT

Construction Noise

Development at the Strawberry Fields Site

Grading and construction activities under Alternative A would be intermittent and temporary in nature. The closest sensitive receptor that would be exposed to potential noise impacts during on-site construction is a private residence located on Bechelli Lane approximately 150 feet north of the northern border of the Strawberry Fields Site and approximately 290 feet from construction. Construction noise levels at and near the Strawberry Fields Site would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction of Alternative A at the Strawberry Fields Site would consist of ground clearing, excavation, erection of foundations and buildings, and finishing work. No pile-driving is proposed. **Table 4.11-1** shows typical maximum construction equipment noise levels at 50 feet from the source. Stationary point sources of construction noise attenuate (lessen) at a rate of 6.0 to 9.0 dBA per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions, topography and type of ground surfaces, natural and manmade noise barriers, etc.). An attenuation factor of 7.0 dBA per doubling of distance is appropriate for this analysis of on-site construction impacts given the flat topography and the presence of mature vegetation on and immediately adjacent to the Strawberry Fields Site.

TABLE 4.11-1
TYPICAL CONSTRUCTION EQUIPMENT NOISE

Equipment Description	Maximum Noise Level at 50 feet, dBA
Crane (mobile or stationary)	85
Dozer	85
Excavator	85
Grader	85
Paver	85
Scraper	85
Tractor	84
Generator (more than 25 kilovolt-amperes [kVA])	82
Backhoe	80
Compressor (air)	80
Front end loader	80
Generator (25 kVA or less)	70
Pickup truck	55
Source: FHWA, 2006.	

The maximum construction noise at the Strawberry Fields Site is estimated to be 85.0 dBA at 50 feet. Given the attenuation factor of 7.0 dBA Leq per doubling of distance, the maximum noise level at the nearest noise-sensitive receptors north of the Strawberry Fields Site (the private residence located

approximately 290 feet northwest of the nearest proposed construction at the Strawberry Fields Site) would be approximately 69.4 dBA, which is less than the FHWA threshold of 78.0 dBA Leq (**Table 3.11-3**). The nearest receptor to on-site construction south of the Strawberry Fields Site is located on Adra Way, approximately 100 feet south of on-site construction activities. Construction noise is estimated to be 85.0 dBA at 50 feet; therefore, construction noise at this receptor would be approximately 79.0 dBA, which would exceed the FHWA standard of 78.0 dBA. Therefore, noise associated with on-site construction under Alternative A Site Access Option 1 would result in temporary significant adverse effects to the ambient noise environment. The Tribe will implement construction BMPs in **Section 2.3.2** to reduce noise impacts to less-than-significant levels, including limiting construction to daytime hours to minimize sleep disturbance, and locating noise generating construction equipment, such as generators, as far from sensitive receptors as possible.

Off-site Access Improvements – Option 1 (North Only)

Construction noise resulting from the off-site access improvements to Bechelli Lane south of South Bonnyview Road under Site Access Option 1 would be similar to the noise associated with on-site construction. Thus, the maximum construction noise resulting from these off-site access improvements is estimated to be 85.0 dBA at 50 feet. The nearest noise-sensitive receptor, a hotel on Bechelli Lane, is approximately 50 feet from the closest extent of off-site construction under Site Access Option 1. Because the estimated maximum construction noise of 85.0 dBA at this receptor would exceed the FHWA standard of 78.0 dBA, construction of the off-site access improvements would have a significant adverse noise impact on sensitive receptors under Site Access Option 1. Noise from construction activities would also exceed the FHWA construction noise standard for commercial areas of 83.0 dBA Leq (refer to **Table 3.11-3**), as there are businesses located within 50 feet of the construction area. The BMPs described in **Section 2.3.2** would reduce these impacts to less-than-significant levels.

Off-site Access Improvements - Option 2 (North and South)

Under Site Access Option 2, the nearest sensitive receptor to construction activities associated with the southern entrance would be a residence located on Adra Way approximately 50 feet south of the southern boundary of the Strawberry Fields Site. As with Site Access Option 1, the maximum construction noise resulting from the off-site access improvements is estimated to be 85.0 dBA at 50 feet. The nearest sensitive receptor, a private residence on Adra Way, is approximately 25 feet from the closest extent of off-site construction under Site Access Option 2. Because the estimated maximum construction noise of more than 85.0 dBA at this receptor would exceed the FHWA standard of 78.0 dBA, construction of the off-site access improvements would have a significant adverse noise impact on sensitive receptors under Site Access Option 2. The BMPs described in **Section 2.3.2** would reduce this noise impact to less-than-significant levels.

Construction Traffic

Construction vehicle trips have the potential to raise ambient noise levels along local routes, depending on the number of trips made and types of vehicles used. All construction traffic would access the Strawberry Fields Site via Bechelli Lane under both Site Access Options (refer to **Figure 2-8**). There are residences in the general vicinity of the anticipated construction vehicle routes and a hotel immediately adjacent to Bechelli Lane; therefore, the FHWA NAC for residential sensitive receptors (67.0 dBA Leq) will be used (refer to **Table 3.11-3**). During construction, a maximum of 605 one-way worker and vendor trips would occur per day. Although construction trips would generally occur outside of the peak hour, it is assumed for this noise analysis, as a worst case scenario, that all construction trips occur during the weekday PM peak traffic hour. Because Alternative A does not involve the import or export of soil from the Strawberry Fields Site (**Appendix C**), it is not anticipated that any material hauling trips would occur.

As shown in **Table 4.11-3** below, during operation, the addition of 822 trips to Bechelli Lane south of South Bonnyview Road would result in a 2.8 dBA Leq increase in the ambient noise level. Construction of Alternative A would increase traffic volumes on Bechelli Lane by approximately 605 vehicle trips, which is less than the increase in trips under operation during the weekday PM peak hour. Because this impact results in a noise increase below the federal NAC threshold (67.0 dBA Leq), construction traffic would result in less-than-significant impacts to nearby sensitive receptors along Bechelli Lane.

Therefore, construction traffic noise under Alternative A Site Access Options 1 and 2 would not result in a significant adverse effect sensitive receptors during any phase of construction. Additionally, it should be noted that construction traffic will be temporary in nature, most construction trips will occur outside the peak hour, and sensitive receptors are located at least 50 feet from Bechelli Lane. BMPs related to noise from trucks and heavy equipment in **Section 2.3.2** would further reduce the potential for noise impacts.

Construction Vibration

Development at the Strawberry Fields Site

Vibration impacts from construction generally occur within 500 feet of a site and only when high-impact or vibration equipment is operated (FTA, 2006). The vibration levels of typical construction equipment at a distance of 25 feet from the equipment are shown in **Table 4.11-2**.

TABLE 4.11-2
VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Vibration Source	Approximate PPV (in/sec) at 25 ft	Approximate Lv (VdB) at 25 ft
Vibratory Roller	0.210	94
Large Bulldozers	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Source: FTA, 2006.		

As shown in **Table 4.11-2**, with the exception of vibratory rollers, vibrations associated with construction equipment are below the thresholds for structural damage (0.12 peak particle velocity [PPV] or 90 VdB) at a distance of 25 feet; however, vibration levels associated with all the equipment in **Table 4.11-2** are above the threshold for annoyance of humans at a distance of 25 feet. As stated above, the nearest vibration-sensitive receptor is more than 25 feet away from the nearest extent of on-site construction. At a distance of 290 feet, the closest sensitive receptor to northern development areas on the Strawberry Fields Site, the vibration amplitude of a vibratory roller is approximately 0.014 PPV, or 62.1 VdB, which is less than the thresholds for both structural damage and the annoyance of people. The nearest receptor to on-site construction south of the Strawberry Fields Site is located on Adra Way, approximately 100 feet south of on-site construction activities. Construction vibration from a vibratory roller at this receptor would be approximately 0.046 PPV (82.0 VdB), which is lower than the aforementioned threshold for structural damage (90.0 VdB), but higher than the threshold for the annoyance of people (70.0 VdB). Therefore, vibration associated with on-site construction under Alternative A on-site construction would have a significant adverse impact on neighboring receptors. BMPs described in **Section 2.3.2** would reduce this impact to a less-than-significant levels.

Off-site Access Improvements – Option 1 (North Access Only)

The nearest sensitive receptor to construction of the North Access Improvement Area under Site Access Option 1 is a hotel approximately 50 feet from the construction site. At that distance, the vibration amplitude of a vibratory roller (the most vibration-intensive piece of equipment that could feasibly be used in off-site construction) is approximately 0.098 PPV, or 85.0 VdB, which is lower than the aforementioned threshold for structural damage (90.0 VdB), but higher than the threshold for the annoyance of people (70.0 VdB). The BMPs described in **Section 2.3.2** would reduce the potential for vibration from construction equipment to less-than-significant levels.

Off-site Access Improvements – Option 2 (North and South Access)

As stated above, the nearest sensitive receptor to off-site construction under Site Access Option 2 is approximately 25 feet away. At this distance, the vibration level of a vibratory roller is approximately 0.210 PPV, or 94 VdB (**Table 4.11-2**), which is higher than both the threshold for structural damage to the most vibration-sensitive structures and the threshold for the annoyance of people. Therefore, vibration associated with the construction of off-site access improvements under Site Access Option 2 would have a significant impact on neighboring sensitive receptors. However, due to the temporary nature of construction and the minimal exceedance of the structural vibration threshold (4 VdB above 94 VdB), the likelihood of structural impacts is low, as transient sources of vibration are less likely to result in structural damage (Caltrans, 2013c). The BMPs provided in **Section 2.3.2** would reduce off-site construction vibration impacts to less-than-significant levels.

Operational Noise

The following identifies potential impacts from project-related noise sources, such as traffic; heating ventilation, and air conditioning (HVAC) systems; parking lots; and delivery trucks.

Traffic Noise

Site Access Option 1

The level of operational traffic noise depends on the volume and speed of traffic as well as the number of trucks in the flow of the traffic. It is not anticipated that average vehicle speeds would change in the vicinity of the Strawberry Fields Site or that the mix of trucks in the traffic flow would change during the operational phase; however, with the implementation of Alternative A, traffic volumes would increase due to the addition of patron and employee vehicle trips. Baseline noise level measurements were collected along representative off-site roadways that would experience an increase in traffic as result of Alternative A. The effects of increased traffic volumes on ambient noise levels in the vicinity of the road segments that would experience the largest increases in project-related vehicle trips are shown in **Table 4.11-3**.

It is not anticipated that any residential sensitive receptors in the vicinity of study area roadways would experience exceedances of the NAC standard of 67.0 dBA Leq with the addition of project vehicle trips. Noise impacts associated with increased traffic volumes on I-5 are evaluated below using the NAC standards. Impacts associated with Bechelli Lane south of South Bonnyview Road were evaluated in an independent noise analysis (included in **Appendix G**) based on the noise standards in the City General Plan's Noise Element; the results of this analysis are summarized below.

Bechelli Lane south of South Bonnyview Road

As shown in **Table 4.11-3**, project-related traffic would cause ambient noise levels along the segment of Bechelli Lane south of Bonnyview Road to increase from 62.3 to 65.2 dBA Ldn under buildout year conditions. The nearest receptor to this roadway is the Hilton Garden Inn hotel located 50 feet southwest. Because the buildout year ambient noise level (62.3 dBA Ldn, refer to **Appendix G**) near the segment of Bechelli Lane around which residential and transient lodging receptors are located is greater than 60.0 dBA Ldn, the noise criteria shown in **Table 3.11-6** apply. Per those criteria, because the existing noise level is greater than 60.0 dBA Ldn but less than 65.0 dBA Ldn, an increase in ambient noise levels of 3.0 dBA or more is considered significant. The increase in traffic volume would cause the ambient noise level at the outdoor activity area of the Hilton Garden Inn to increase by 2.9 dBA, to 65.2 dBA Ldn (**Appendix G**). Because this change is lesser than the 3.0 dBA significance threshold, noise impacts associated with the addition of project traffic to Bechelli Lane south of South Bonnyview Road under Site Access Option 1 would not be significant.

TABLE 4.11-3
BUILDOUT YEAR (2025) TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE A SITE ACCESS OPTIONS 1 AND 2

Roadway Segment	Buildout Year (2025)		Buildout Year (2025) Plus Alternative A							
	Friday PM Peak Hour	dBA Leq ¹	Site Access Option 1				Site Access Option 2			
			Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?	Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
Bechelli Lane south of South Bonnyview Road ²	151	62.3	1,290	65.2	2.9	No	973	64.6	2.3	No
Bechelli Lane north of South Bonnyview Road	1,570	65.1	1,612	65.2	0.1	No	1,612	65.2	0.1	No
South Bonnyview Road between southbound I-5 off-ramp and Bechelli Lane	3,301	63.3	4,017	64.2	0.9	No	3,700	63.8	0.5	No
South Bonnyview Road between East Bonnyview Road and Bechelli Lane	2,639	62.4	2,721	62.5	0.1	No	2,721	62.5	0.1	No
Churn Creek Road between Alrose Lane and Victor Avenue	1,238	63.2	1,275	63.3	0.1	No	1,275	63.3	0.1	No
Churn Creek Road between Smith Road and Knighton Road	266	62.3	266	62.3	0.0	No	583	65.7	3.4	Yes
Smith Road between Churn Creek Road and Adra Way	58	58.5	58	58.5	0.0	No	375	66.6	8.1	Yes
Adra Way north of Smith Road ²	6	58.4	6	58.4	0.0	No	322	60.0	1.6	No
Notes: Bolded noise levels indicate exceedances of noise thresholds. 1 – Year 2025 Friday PM Peak Hour dBA Leq was calculated using the equation $10 * \log (2025 \text{ traffic volume} / 2016 \text{ traffic volume}) + \text{dBA Leq at closest 2016 noise measurement location (Appendix G)}$. 2 – Adra Way and Bechelli Lane off-site access improvements were analyzed in Appendix G based on 2025 traffic volumes, and noise levels are provided in dBA Ldn rather than dBA Leq. Source: Appendix F, Appendix G.										

Site Access Option 2

Table 4.11-3 provides the anticipated noise level increases under Alternative A Site Access Option 2. Residential sensitive receptors in the vicinity of study area roadways that would experience exceedances of the NAC standard of 67.0 dBA Leq with the addition of project vehicle trips under Site Access Option 2 are discussed below. As described in **Section 2.3.2**, speed limits would be restricted on the South Access road within the Strawberry Fields Site.

Bechelli Lane south of South Bonnyview Road

As shown in **Table 4.11-3**, project related traffic would cause ambient noise levels along the segment of Bechelli Lane south of Bonnyview Road to increase from 62.3 to 64.6 dBA Ldn under buildout year conditions. The nearest receptor to this roadway is the Hilton Garden Inn located 50 feet southwest. The increase in traffic volume would cause the ambient noise level at the outdoor activity area of the Hilton Garden Inn to increase by 2.3 dBA, to 64.6 dBA Ldn (**Appendix G**). Because this change is less than the 3.0 dBA significance threshold, noise impacts associated with the addition of project traffic to Bechelli Lane south of South Bonnyview Road under Site Access Option 2 would be less than significant. No mitigation is required.

Churn Creek Road between Smith Road and Knighton Road and Smith Road between Churn Creek Road and Adra Way

There are multiple sensitive receptors located along the study area segments of Churn Creek Road and Smith Road, varying from approximately 30 to 320 feet in distance from the roadway. Although the addition of project traffic to these roadway segments would result in an audible increase (an increase of more than 3.0 dBA Leq) in traffic noise levels under Site Access Option 2, the resulting ambient noise level would be below the 67.0 dBA Leq threshold for residential sensitive receptors. Therefore, noise impacts associated with increased traffic volumes under Site Access Option 2 would not have a significant impact on sensitive receptors in the vicinity of these roadways.

Adra Way north of Smith Road

As shown in **Table 4.11-3**, project related traffic would cause ambient noise levels along the segment of Adra Way north of Smith Road to increase from 58.4 to 60.0 dBA Ldn under buildout year conditions. The nearest receptor to this roadway is located 25 feet east. Because there is no feasible mitigation available to maintain ambient noise levels in the vicinity of residential sensitive receptors at less than 60.0 dBA Ldn, the noise criteria shown in **Table 3.11-6** apply. Per those criteria, because the buildout year ambient noise level (58.4 dBA Ldn; refer to **Appendix G**) would be less than 60.0 dBA Ldn, an increase in the ambient noise level of 5 dBA or more would be considered significant. The addition of project traffic to Adra Way under Site Access Option 2 would cause the ambient noise level to increase by 1.6 dBA Ldn, to 60.0 dBA Ldn (**Appendix G**). Because this change would be less than 5.0 dBA, the noise impacts associated with increased traffic on Adra Way under Site Access Option 2 would be less than significant, and no mitigation is required.

Other Noise Sources

Commercial uses on the Strawberry Fields Site would have the potential to increase the ambient noise level due to operations of roof-mounted air handling units associated with building HVAC systems, as well as added noise from loading docks, surface parking lots, and driveways. The noise levels produced by HVAC systems vary substantially with the capacities of the units, as well as with individual unit design, but generally result in a noise level of 60.0 dBA Leq at a distance of 20 feet (Berger et al., 2015); this is below the NAC standard for residential sensitive receptors of 67.0 dBA Leq. Based on similar commercial projects, idling trucks at loading docks, proposed under Alternative A, have the potential to generate a noise level of up to 63.0 dBA Leq at a distance of 100 feet from the source (j.c. brennan, 2010). The proposed loading docks would be located on the northwest side of the outdoor sports retail facility and along the southern side of the casino/hotel complex, approximately 490 feet from the nearest sensitive receptor. Given that noise associated with loading docks generally does not exceed the NAC standard of 67.0 dBA Leq at a distance of 50 feet, the operation of the on-site loading docks would not increase the ambient noise levels at sensitive receptors or result in significant adverse effects to the nearest noise-sensitive receptors under Alternative A.

Increases in the ambient noise level associated with paved surface parking lots and driveways under Alternative A would be mainly due to slow-moving and idling vehicles, the opening and closing of doors, and patron conversation. The noise level in parking lots and parking structures is generally dominated by slow-moving vehicles; thus, the ambient noise level in parking structures and parking lots is approximately 60.0 dBA (Illingworth & Rodkin, Inc., 2014), which is less than the NAC of 67.0 dBA. Therefore, miscellaneous noise levels from on-site vehicles and HVAC equipment under Alternative A would not result in significant adverse effects associated with the off-site ambient noise environment. The BMPs provided in **Section 2.3.2** would further reduce these impacts.

Events at the outdoor amphitheater proposed under Alternative A would also be a temporary and intermittent source of operational noise. Based on noise monitoring data from events at similar venues, the outdoor noise level would be approximately 94 dBA Leq at a distance of 100 feet from the stage during events (MEC, 2008). Assuming an attenuation factor of 7.0 dBA per doubling of distance, the noise level at the closest sensitive receptor, a private residence located approximately 1,050 feet north of the amphitheater stage, would be approximately 70.8 dBA Leq during events. Because this exceeds the NAC of 67.0 dBA, the impact of outdoor events on noise-sensitive receptors north of the Strawberry Fields Site would be potentially significant. However, the proposed amphitheater would be oriented eastward, projecting noise towards the commercial areas within the site and I-5, away from nearest residential receptors. Additionally, the outdoor sports retail complex proposed under Alternative A would be located between the amphitheater and the northern boundary of the Strawberry Fields Site, which would partially deflect sound generated at outdoor events. As a result of these factors, the actual ambient noise level at the closest sensitive receptors during outdoor events is likely to be lower than 70.8 dBA Leq. While sensitive receptors located west of the Strawberry Fields Site across the Sacramento River may experience reflected noise from buildings east of the amphitheater, the distance between the

amphitheater and these receptors is greater than 2,000 feet. Noise at these locations would be lesser than noise at the receptors north of the Strawberry Fields Site, which are approximately twice as close. The mitigation measure in **Section 5.11** would ensure that impacts to noise sensitive receptors are reduced to less-than-significant levels.

Operational Vibration

Commercial and hotel uses do not include sources of perceptible vibration, and the addition of project traffic to improved roadway segments would not appreciably increase ambient vibration relative to the existing baseline. Therefore, operation of Alternative A would not result in significant adverse effects associated with vibration, and no mitigation is required.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal governmental and housing uses. No exterior improvements or construction activities would occur, and noise levels at the existing casino would decrease due to the decreased visitation and operational hours. No significant noise impacts would occur.

4.11.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Construction Noise and Vibration

Due to the reduction in the size of development components and reduced number of construction vehicle trips, the noise and vibration impacts associated with both on-site and off-site construction under Alternative B Site Access Options 1 and 2 would be similar to or lesser than those described under Alternative A Site Access Options 1 and 2, respectively. These impacts would be reduced to less-than-significant levels through BMPs provided in **Section 2.3.2**.

Operational Noise

Traffic Noise

Traffic volumes on all road segments would be reduced under Alternative B Site Access Options 1 and 2 relative to Alternative A Site Access Options 1 and 2, respectively (**Appendix F**). As described in **Appendix G**, the increase in traffic volume on Bechelli Lane south of South Bonnyview Road under Site Access Option 1 would cause the ambient noise level to increase by 2.5 dBA, to 64.8 dBA Ldn. Because this change is less than the 3.0 dBA significance threshold, noise impacts associated with the addition of project traffic to Bechelli Lane would be less than significant. Therefore, noise impacts associated with increased traffic on all road segments would be less than significant, and no mitigation is required. The design of the on-site northern and southern access driveways would be the same under Alternative B Site Access Options 1 and 2 as under Alternative A Site Access Options 1 and 2, respectively, though the traffic volume on those driveways would be lower (**Appendix F**). Thus, as with Alternative A Site

Access Options 1 and 2, the impacts to ambient noise levels from traffic on the northern and southern access driveways would be less than significant under Alternative B Site Access Options 1 and 2, and no mitigation is required. The BMPs provided in **Section 2.3.2** would further reduce these impacts.

Other Noise Sources

Due to the orientation of structures, parking lots, and driveways under Alternative B Site Access Options 1 and 2, impacts associated with on-site vehicular and HVAC operational noise sources would be lesser than under Alternative A Site Access Options 1 and 2, respectively; thus, the operational noise impacts associated with Alternative B Site Access Options 1 and 2 would be less than significant, with the exception of operational noise impacts associated with the outdoor amphitheater. Noise impacts resulting from events at the outdoor amphitheater would be very similar to those described under Alternative A, and therefore would be potentially significant. The mitigation measure included in **Section 5.11** would reduce these impacts to less-than-significant levels.

Operational Vibration

Operational vibration under Alternative B would be no more severe than under Alternative A. Thus, the impacts of operational vibration on sensitive receptors would be less than significant.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative B, the existing Win-River Casino would be converted to tribal governmental and housing uses. No exterior improvements or construction activities would occur, and noise levels at the existing casino would decrease due to the decreased visitation and operational hours. No significant noise impacts would occur.

4.11.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Construction Noise and Vibration

With the exception of construction traffic noise, noise impacts resulting from construction activities under Alternative C Site Access Options 1 and 2 would be similar to, but lesser than, impacts from Alternative A due to the reduction in the size of development components. Alternative C would generate a higher number of construction vehicle trips (638) during the most intensive construction phase compared to Alternative A, due to the land use type distribution differences between Alternatives A and C.

Conservatively assuming all construction vehicle trips would occur during the weekday PM peak hour, construction of Alternative C would cause the traffic volume on Bechelli Lane south of South Bonnyview Road to increase from 99 to 737 vehicle trips. As shown in **Table 4.11-3** above, the addition of 822 trips to Bechelli Lane south of South Bonnyview Road would result in a 2.8 dBA Leq increase in the ambient noise level. Construction of Alternative C would increase traffic volumes on Bechelli Lane by approximately 638 vehicle trips, which is less than the increase in trips under operation during the weekday PM peak hour. Because this impact results in a noise increase below the federal NAC threshold (67.0 dBA Leq), construction traffic would result in less-than-significant impacts to nearby sensitive

receptors along Bechelli Lane. Therefore, construction noise resulting from Alternative C Site Access Options 1 and 2 would not result in significant adverse effects to nearby sensitive receptors, and no mitigation is required. Additionally, it should be noted that construction traffic will be temporary in nature, most construction trips will occur outside the peak hour, and sensitive receptors are located at least 50 feet from Bechelli Lane. As with Alternative A, BMPs related to noise from trucks and heavy equipment have been included in **Section 2.3.2** to reduce impacts related to vibration from construction traffic to less than significant.

The extent of off-site construction under Alternative C Site Access Options 1 and 2 would be the same as under Alternative A Site Access Options 1 and 2, respectively. Thus, off-site construction under Alternative C Site Access Options 1 and 2 would generate similar adverse noise impacts to neighboring commercial and transient lodging sensitive receptors. The BMPs provided in **Section 2.3.2** would reduce these noise impacts to less-than-significant levels. The impacts of off-site construction vibration on neighboring sensitive receptors would be no more severe than those identified for Alternative A Site Access Options 1 and 2. Therefore, construction vibration impacts would be less than significant with mitigation.

Operational Noise

Traffic Noise

Traffic volumes on all road segments would be reduced under Alternative C Site Access Options 1 and 2 relative to Alternative A Site Access Options 1 and 2, respectively (**Appendix F**). As described in **Appendix G**, the increase in traffic volume on Bechelli Lane south of South Bonnyview Road under Site Access Option 1 would cause the ambient noise level to increase by 2.6 dBA, to 64.9 dBA Ldn. Because this change is less than the 3.0 dBA significance threshold, noise impacts associated with the addition of project traffic to Bechelli Lane would be less than significant. Therefore, noise impacts associated with increased traffic on all road segments would be less than significant. The design of the on-site northern and southern access driveways would be the same under Alternative C Site Access Options 1 and 2 as under Alternative A Site Access Options 1 and 2, respectively, though the traffic volume on those driveways would be lower (**Appendix F**). Thus, as with Alternative A Site Access Options 1 and 2, the impacts to ambient noise levels from traffic on the northern and southern access driveways would be less than significant under Alternative C Site Access Options 1 and 2, and no mitigation is required. The BMPs provided in **Section 2.3.2** would further reduce these impacts.

Other Noise Sources

Due to the orientation of structures, parking lots, and driveways under Alternative C Site Access Options 1 and 2, impacts associated with on-site vehicular and HVAC operational noise sources would be lesser than under Alternative A Site Access Options 1 and 2, respectively; thus, the operational noise impacts associated with Alternative C Site Access Options 1 and 2 would be less than significant, with the exception of impacts associated with the outdoor amphitheater. Noise impacts resulting from events at

the outdoor amphitheater would be very similar to those described under Alternative A, and therefore would be potentially significant. The mitigation measure included in **Section 5.11** would reduce these impacts to less-than-significant levels.

Operational Vibration

Operational vibration under Alternative C would be no more severe than under Alternative A. Thus, the impacts of operational vibration on sensitive receptors would be less than significant, and no mitigation is required.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative C, the existing Win-River Casino would be converted to tribal governmental and housing uses. No exterior improvements or construction activities would occur, and noise levels at the existing casino would decrease due to the decreased visitation and operational hours. No significant noise impacts would occur.

4.11.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Construction Noise and Vibration

Due to the reduction in the size of development components and reduced number of construction vehicle trips, the noise and vibration impacts associated with both on-site and off-site construction under Alternative D Site Access Options 1 and 2 would be similar to or lesser than those described under Alternative A Site Access Options 1 and 2, respectively. These impacts would be reduced to less-than-significant levels through BMPs provided in **Section 2.3.2**.

Operational Noise

Traffic Noise

Traffic volumes on all road segments would be reduced under Alternative D Site Access Options 1 and 2 relative to Alternative A Site Access Options 1 and 2, respectively (**Appendix F**). Therefore, noise impacts associated with increased traffic on all road segments would be less than significant. The design of the on-site northern and southern access driveways would be the same under Alternative D Site Access Options 1 and 2 as under Alternative A Site Access Options 1 and 2, respectively, though the traffic volume on those driveways would be lower (**Appendix F**). Thus, as with Alternative A Site Access Options 1 and 2, the impacts to ambient noise levels from traffic on the northern and southern access driveways would be less than significant under Alternative D Site Access Options 1 and 2, and no mitigation is required. The BMPs provided in **Section 2.3.2** would further reduce these impacts.

Other Noise Sources

Due to the orientation of structures, parking lots, and driveways under Alternative D Site Access Options 1 and 2, impacts associated with non-traffic operational noise sources would be lesser than under

Alternative A Site Access Options 1 and 2, respectively; thus, the operational noise impacts associated with Alternative D Site Access Options 1 and 2 would be less than significant. The BMPs provided in **Section 2.3.2** would further reduce these impacts. No outdoor amphitheater is proposed under Alternative D, and thus none of the potential noise impacts associated with this complex would occur.

Operational Vibration

Operational vibration under Alternative D would be no more severe than under Alternative A. Therefore, impacts of operational vibration on sensitive receptors would be less than significant under Site Access Options 1 and 2, and no mitigation is required.

4.11.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Construction Noise

The closest sensitive receptor that would be exposed to impacts from the construction of Alternative E is a private residence located on Oak Street adjacent to the Anderson Site and approximately 75 feet from the nearest extent of proposed construction at the Anderson Site. There are other private residences along Nathan Drive and Oak Street located approximately 100 feet from the nearest extent of proposed construction. As with construction at the Strawberry Fields Site, the maximum noise level resulting from construction activities at the Anderson Site is estimated to be 85.0 dBA at a distance of 50 feet. Given the flat topography and the proximity of sensitive receptors to the construction site, an attenuation factor of 6.0 dBA per doubling of distance is appropriate. Thus, the maximum construction noise level at the nearest residential sensitive receptor would be approximately 82.0 dBA, while the noise level at the receptors approximately 100 feet from the construction site would be 79.0 dBA. These noise levels would exceed the federal construction noise thresholds. The BMPs provided in **Section 2.3.2** would reduce this impact to less-than-significant levels.

Construction Traffic

During construction of Alternative E, a maximum of 638 one-way worker and vendor trips would occur per day. Although construction trips would generally occur outside of the peak hour, it is assumed for this noise analysis, as a worst case scenario, that all construction trips occur during the weekday PM peak hour. Because Alternative E does not involve the import or export of soil from the Anderson Site (**Appendix C**), it is not anticipated that any material hauling trips would occur. All construction traffic would access the site via Oak Street (refer to **Figure 2-5**). The existing noise level in the vicinity of Oak Street near noise-sensitive receptors is approximately 55.5 dBA (refer to **Table 3.11-8**). The volume of traffic along Oak Street near the Anderson Site is approximately 125 vehicle trips in the weekday PM peak hour. Assuming that construction trips associated with Alternative E would increase traffic volumes on Oak Street to approximately 763 vehicles during the weekday PM peak hour, the ambient noise level along Oak Street would increase by 7.9 dBA Leq, to 63.4 dBA Leq. The increase in ambient noise levels due to construction trips would be less than the FHWA construction noise threshold for noise-sensitive

receptors of 67.0 dBA Leq. Therefore, noise resulting from construction trips associated with Alternative E would not result in a significant adverse effect to the ambient noise level during any phase of construction. Additionally, it should be noted that construction traffic will be temporary in nature and most construction trips will occur outside the peak hour. The BMPs in **Section 2.3.2** would further reduce the potential for noise impacts.

Construction Vibration

The vibration levels generated by construction activities under Alternative E would be similar to those generated under Alternatives A through D (refer to **Table 4.11-2**). At a distance of 75 feet, the closest of the neighboring sensitive receptors to the Anderson Site, the vibration amplitude of the most vibration-intensive piece of equipment that would be used during construction is approximately 0.063 PPV, or 79.7 VdB, which is below the threshold for structural damage but above the threshold for the annoyance of people. The BMPs provided in **Section 2.3.2** would reduce this impact to less-than-significant levels.

Operational Noise

Traffic Noise

The effects on ambient noise levels of increases in traffic on the road segments that would be most impacted by the operation of Alternative E are shown in **Table 4.11-4**. As shown therein, the addition of project-related traffic would cause none of the road segments to exceed the NAC standard of 67.0 dBA Leq for residential sensitive receptors. While the increases in traffic on the three segments of Oak Street would cause audible changes in the ambient noise level (3.0 dBA), the resulting noise levels on all segments would be below the NAC standard (67 dBA Leq), and thus would not cause a significant adverse effect to sensitive receptors. Thus, no mitigation related to traffic noise is required.

Other Noise Sources

The noise generated by HVAC equipment, idling trucks, and slow-moving vehicles in parking lots and driveways under Alternative E would be similar to that under Alternative A; refer to **Section 4.11.1**. Because the noise associated with vehicles in parking lots and driveways would not exceed approximately 60.0 dBA Leq (Illingworth & Rodkin, Inc., 2014), on-site passenger vehicle noise would not significantly impact noise-sensitive receptors. The closest idling truck and HVAC equipment noise sources would be located approximately 100 feet from the nearest residential sensitive receptors. As with Alternative A, it is anticipated that the maximum noise level associated with HVAC equipment and trucks at loading docks would be very similar to the level of 63.0 dBA Leq at a distance of 100 feet (j.c. brennan, 2010) measured at other commercial operations. Thus, given the projected noise level and the distance to the nearest noise-sensitive receptors, on-site vehicular and HVAC operational noise associated with Alternative E would cause the ambient noise level to exceed the NAC standard of 67.0 dBA Leq. The impacts would therefore be less than significant, and no mitigation is required. However, BMPs are provided in **Section 2.3.2** to further reduce these impacts. No outdoor amphitheater is proposed under Alternative E.

TABLE 4.11-4
TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE E

Roadway Segment	Buildout Year (2025)		Buildout Year (2025) Plus Alternative E			
	Friday PM Peak Hour	dBA Leq ¹	Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
Oak Street north of North Street	126	55.5	1,246	65.5	10.0	Yes
Oak Street between North Street and South Street	48	55.5	338	64.0	8.5	Yes
Oak Street between South Street and Balls Ferry Road	46	56.0	316	64.4	8.4	Yes
North Street between southbound I-5 off-ramp and Oak Street	922	62.7	1,493	64.8	2.1	No
North Street between SR-273 and Oak Street	750	56.0	1,011	57.3	1.3	No
Note: 1 – Year 2025 Friday PM Peak Hour dBA Leq was calculated using the equation $10 * \log (2025 \text{ traffic volume} / 2016 \text{ traffic volume}) + \text{dBA Leq at closest 2016 noise measurement location (Appendix G)}$. Source: Appendix F, Appendix G.						

Operational Vibration

Commercial and hotel uses do not include sources of perceptible vibration, and the addition of project traffic to improved roadway segments would not appreciably increase ambient vibration relative to the existing baseline. Thus, the impacts of operational vibration would be less than significant, and no mitigation is required.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative E, the existing Win-River Casino would be converted to tribal governmental and housing uses. No exterior improvements or construction activities would occur, and noise levels at the existing casino would decrease due to the decreased visitation and operational hours. No significant noise impacts would occur.

4.11.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Construction Noise

The closest sensitive receptor that would be exposed to impacts from the construction of Alternative F is a residence located on Redding Rancheria Road adjacent to the existing Win-River Casino parking lot and approximately 100 feet from the nearest extent of proposed construction at the Win-River Casino Site. As with construction at the Strawberry Fields Site, the maximum noise level from construction activities at the Win-River Casino Site is estimated to be 85.0 dBA at a distance of 50 feet. Given the flat topography and the proximity of sensitive receptors to the construction site, an attenuation factor of 6.0 dBA per doubling of distance is appropriate. Thus, the maximum construction noise level at the nearest sensitive receptor would be approximately 79.0 dBA, which would exceed the FHWA construction noise

threshold of 78 dBA. As stated in **Section 3.11.3**, because both the Win-River Casino Site and the affected residential sensitive receptor are located on the Tribe's existing reservation, federal noise standards do not apply. However, the Tribe desires to shield patrons and current Rancheria residents from harmful or excessive noise levels. The BMPs provided in **Section 2.3.2** would reduce this impact to less-than-significant levels.

Construction Traffic

During the construction phase, Alternative F would generate a maximum of approximately 359 daily worker and vendor trips, all of which would access the Win-River Casino Site via Redding Rancheria Road. While these vehicle trips would be distributed throughout the day, it is assumed for this analysis, as a worst case scenario, that all construction vehicle trips occur during the weekday PM peak hour. Because Alternative F does not require a net import or export of soils, no material hauling truck trips are anticipated. The ambient noise level in the vicinity of sensitive receptors adjacent to Redding Rancheria Road on the Win-River Casino Site is conservatively estimated to be 55.0 dBA Leq (The Engineering Toolbox, 2017). The volume of traffic along Redding Rancheria Road near the Win-River Casino Site is approximately 364 vehicle trips in the weekday PM peak hour. Assuming that construction trips associated with Alternative F would increase traffic volumes on Redding Rancheria Road to approximately 723 vehicles during the weekday PM peak hour, which would cause the ambient noise level to increase by 3.0 dBA Leq, to 58.0 dBA Leq. Because the resulting ambient noise level would be less than the FHWA NAC for residential sensitive noise receptors of 67.0 dBA Leq, the impact would be less than significant, and no mitigation is required.

Construction Vibration

The vibration levels generated by construction activities under Alternative F would be similar to those generated under Alternatives A through E (refer to **Table 4.11-2**). At a distance of 100 feet, the closest of the neighboring sensitive receptors to the Win-River Casino Site, the vibration amplitude of the most vibration-intensive piece of equipment that would be used during construction is approximately 0.046 PPV, or 75.9 VdB, which is below the thresholds for structural damage but above the threshold for the annoyance of people. The BMPs provided in **Section 2.3.2** would reduce these impacts to less-than-significant levels.

Operational Noise

Traffic Noise

The effects on ambient noise levels of increases in traffic on the road segments that would be most impacted by the operation of Alternative F are shown in **Table 4.11-5**. As shown therein, the addition of project-related traffic would cause none of the road segments to exceed the NAC standard of 67.0 dBA Leq for residential sensitive receptors. Furthermore, none of the traffic segments would experience an increase in traffic that would result in an audible change in the noise level. Thus, the impacts of

operational traffic noise on sensitive receptors under Alternative F would be less than significant, and no mitigation is required.

TABLE 4.11-5
TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE F

Roadway Segment	Buildout Year (2025)		Buildout Year (2025) Plus Alternative F			
	Friday PM Peak Hour	dBA Leq ¹	Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
SR-273 (South Market Street) north of Redding Rancheria Road	1,796	61.9 ²	1,892	62.1	0.2	No
SR-273 (South Market Street) south of Redding Rancheria Road	1,172	62.2 ²	1,196	62.3	0.1	No
Redding Rancheria Road between SR-273 and Canyon Road	923	55.0 ³	1,043	55.5	0.5	No
Redding Rancheria Road west of Canyon Road	366	55.0 ³	490	56.3	1.3	No
Notes: 1 – Year 2025 Friday PM Peak Hour dBA Leq was calculated using the equation $10 * \log (2025 \text{ traffic volume} / 2016 \text{ traffic volume}) + \text{dBA Leq at closest 2016 noise measurement location (Appendix G)}$. 2 – Conservative assumption based on the recorded sound level at Site E (refer to Table 3.11-7), which was located a similar distance from a road (South Bonnyview Road) with a comparable but somewhat higher traffic volume than SR-273. 3 – Refer to <i>Construction Traffic</i> above. Source: Appendix F ; Appendix G ; The Engineering Toolbox, 2017.						

Other Noise Sources

Alternative F would not change the proximity of on-site truck loading docks, parking lots, and driveways to neighboring sensitive receptors relative to existing conditions at the Win-River Casino Site. However, operational noise from any HVAC equipment associated with the new event center would add an additional stationary noise source in closer proximity to neighboring sensitive receptors. As stated above, while the noise associated with HVAC equipment varies considerably based on the design of the unit, these systems generally result in a noise level of 60.0 dBA Leq at a distance of 20 feet (Berger et al., 2015). Because this is less than the NAC standard of 67.0 dBA Leq for noise-sensitive receptors, impacts related to on-site vehicles and HVAC equipment operational noise would be less than significant, and no mitigation is required. However, BMPs have been included in **Section 2.3.2** to further reduce any potential impacts.

Operational Vibration

Because event center and parking structure uses do not include significant sources of vibration, operational vibration under Alternative F would be no more severe than the vibration associated with construction activities. Thus, the impacts of operational vibration on neighboring sensitive receptors would be less than significant, and no mitigation is required.

4.11.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, no development would occur on any of the sites in the near term. No change in land use would occur, and all sites would remain in their current state. None of the potentially adverse effects identified for Alternatives A through F would occur. No mitigation is required.

4.12 HAZARDOUS MATERIALS

This section assesses the significance of the direct effects related to hazardous materials that could result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.12**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively.

Assessment Criteria

Impacts associated with hazardous materials include impacts resulting from a release of hazardous materials and impacts from improper hazardous materials management. A project would be considered to have significant hazardous materials impacts if it involved development on a site with hazardous materials contamination. Additionally, if a project would result in the use, handling, or generation of a regulated hazardous material, of which the regulated amounts would increase the potential risk of exposure resulting in reduction of quality of life or loss of life, then the project would have a significant impact.

4.12.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

Construction

Although no major hazardous materials issues are known to be associated with the Strawberry Fields Site, the possibility exists that undiscovered contaminated soil and/or groundwater is present on the site due to the migration of hazardous materials from off-site properties or unknown hazardous materials dumping. Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities. This could pose a risk to human health and/or the environment. Best Management Practices (BMPs) presented in **Section 2.3.2** would minimize or eliminate adverse effects from undiscovered contaminated soil or groundwater.

During grading and construction, the use of hazardous materials may include substances such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. These materials would be used for operation and maintenance of equipment as well as directly in the construction of the facilities. Fueling and oiling of construction equipment would be performed daily. The most likely possible hazardous materials releases would involve the dripping of fuels, oil, and grease from construction equipment. The small quantities of fuel, oil, and grease that may drip would have low relative toxicity and concentrations. Typical BMPs for construction limit and often eliminate the effect of such accidental releases. Specific BMPs presented in **Section 2.3.2** would minimize the risk of inadvertent release and, in the event of a contingency, minimize adverse effects. With these BMPs, Alternative A would not result in significant adverse effects associated with hazardous materials during construction.

Operation

As discussed in **Section 3.12**, the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations include provisions that require facilities to document the potential risk associated with the storage, use, and handling of toxic and flammable substances.

Should an on-site wastewater treatment plant (WWTP) be developed, as described in **Section 2.3.2** under Wastewater Option 2, the delivery, storage, and use of hazardous materials, including chlorine for disinfection, would occur. With proper handling and storage of chemicals in accordance with regulatory requirements, no significant impacts are anticipated as a result of the proposed on-site WWTP. However, BMPs for the storage and handling of hazardous materials are provided in **Section 2.3.2** in order to further reduce impacts resulting from hazardous materials.

Diesel fuel storage tanks would be needed for the operation of emergency generators provided for the casino development and potential WWTP. Generators would be located in areas that are easily accessible to maintenance and emergency personnel. The transport of diesel fuel would not be infrequent and is not likely to present a significant hazard to the public. Improper storage of diesel fuels could create a potentially significant risk of soil and groundwater contamination. The storage tanks that would be used are common to commercial sites and do not pose unusual storage, handling, or disposal issues. Materials would be stored, handled, and disposed of according to federal and manufacturer's guidelines. Therefore, operation of Alternative A would not result in significant adverse effects associated with the storage tanks.

The storage and use of swimming pool chemicals would be necessary for operation of the hotel swimming pool facility. Generally, liquid chlorine and liquid muriatic or dry granular sodium bisulfate are the primarily utilized pool chemicals. The materials would be stored within a secured building and only used by qualified personnel, minimizing the chance of impacts to human health and the environment. The swimming pool chemicals that would be used are common to commercial sites and do not pose unusual storage, handling, or disposal issues. Materials would be stored, handled, and disposed of according to federal and manufacturer's guidelines. Therefore, operation of Alternative A would not result in significant adverse effects associated with the use, storage, and transportation of swimming pool chemicals.

Project-related use, transport, and storage of landscape chemicals (fertilizers, herbicides, and pest control chemicals), would be limited to infrequent transport for use on site. Although the transport of these materials would occur in relatively small amounts, their transport would be governed by federal and State laws to ensure proper transport occurs, thus minimizing the chance of impacts to human health and the environment. Nevertheless, if improperly managed, the presence of landscape chemicals could pose a risk to employees and casino patrons. The amount and types of landscape chemicals that would be used are common to commercial sites and do not pose unusual storage, handling, or disposal issues. Materials would be stored, handled, and disposed of according federal and manufacturer's guidelines. Therefore,

operation of Alternative A would not result in significant adverse effects associated with the use of landscape chemicals.

During operation of the facilities proposed under Alternative A, the majority of waste produced would be non-hazardous. The small quantities of hazardous materials that would be generated are common to commercial sites and do not pose unusual storage, handling, or disposal issues. The small quantities of hazardous materials that would be routinely utilized include motor oil, hydraulic fluid, solvents, cleaners, lubricants, paint, and paint thinner. These materials would be utilized for the operation and maintenance of the casino-hotel and other project facilities. Therefore, operation of Alternative A would not result in significant adverse effects associated with hazardous materials and waste handling.

Off-site Access Improvements

Alternative A would result in the construction of access improvements, including development of North and South Access Improvement Areas. Both access improvement areas are existing roadways and would be widened for improved access to the Strawberry Fields Site. Construction personnel could encounter contamination during construction-related earth moving activities. The BMPs presented in **Section 2.3.2** would ensure that unanticipated hazardous materials impacts from construction activity are reduced to less-than-significant levels.

The amount and types of hazardous materials that would be stored, used, and generated during the construction of the Off-site Access Improvement Areas would be similar as those described under the *Proposed Project* subheading. As discussed above, BMPs for the storage and handling of hazardous materials are provided in **Section 2.3.2**. Adherence to these BMPs would minimize the risk of inadvertent release during construction, and, in the event of a contingency, minimize adverse effects. With these BMPs, the construction taking place on the Off-site Access Improvement Areas would not result in significant adverse effects associated with hazardous materials.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal services and housing uses. No exterior improvements or construction activities would occur; therefore, potential hazardous materials impacts would be less than significant.

4.12.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE Development at the Strawberry Fields Site Construction

Impacts from construction resulting from Alternative B would be similar to Alternative A, with the exception that the 130,000 square foot (sf) sports retail center and associated surface parking would not be constructed. Therefore, impacts from the development of Alternative B would be similar, but reduced,

compared to Alternative A. As with Alternative A, it is possible that undiscovered contaminated soil and/or groundwater exists on the site. Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities associated with Alternative B.

Operation

The types of hazardous materials that would be used, generated, and stored during the operation of Alternative B would be similar to those discussed under Alternative A. Refer to **Section 4.12.1** for a description of potentially significant effects resulting from hazardous materials usage and storage during project operation. With incorporation of BMPs provided in **Section 2.3.2**, Alternative B would result in less-than-significant effects associated with hazardous materials.

Off-site Access Improvements

Impacts resulting from Site Access Option 1 and 2 under Alternative B would be the same as Alternative A (**Section 4.12.1**).

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative B would be the same as Alternative A (refer to **Section 4.12.1**).

4.12.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Development at the Strawberry Fields Site

Construction

Impacts from construction resulting from Alternative C would be similar to Alternative A, but with a smaller casino and dining area. Therefore, impacts from the development of Alternative C would be similar, but reduced, compared to Alternative A. As with previous alternatives, it is possible that undiscovered contaminated soil and/or groundwater exists on the site. Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities associated with Alternative C. The BMPs presented in **Section 2.3.2** would minimize or eliminate adverse effects from the unanticipated discovery of hazardous materials during construction of Alternative C.

Operation

The types of hazardous materials that would be used, generated, and stored during the operation of Alternative C would be similar to, but less than, those of Alternative A. Refer to **Section 4.12.1** for a description of potentially significant effects resulting from hazardous materials usage and storage during project operation. With incorporation of BMPs provided in **Section 2.3.2**, Alternative C would result in less-than-significant effects associated with hazardous materials.

Off-site Access Improvements

Impacts resulting from Site Access Option 1 and 2 under Alternative C would be the same as Alternative A (Section 4.12.1).

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative C would be the same as Alternative A (refer to Section 4.12.1).

4.12.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Development at the Strawberry Fields Site

Construction

Impacts from construction resulting from Alternative D would be similar to Alternative A, with the exception of the casino, event center, and conference center. Therefore, impacts from the development of Alternative D would essentially be the same, but reduced, compared to those described in Alternative A. It is possible that undiscovered contaminated soil and/or groundwater exists on the site. Although not anticipated, construction personnel could encounter contamination during construction-related earth moving activities associated with Alternative D. The BMPs presented in Section 2.3.2 would minimize or eliminate adverse effects from the unanticipated discovery of hazardous materials during construction of Alternative D.

Operation

The types of hazardous materials that would be used, generated, and stored during the operation of Alternative D would be similar to those of Alternative A but on a reduced scale due to the exclusion of the casino facility and the significant reduction in size of other components. Refer to Section 4.12.1 for a description of potentially significant effects resulting from hazardous materials usage and storage during project operation. With incorporation of BMPs presented in Section 2.3.2, Alternative D would result in less-than-significant effects associated with hazardous materials.

Off-site Access Improvements

Impacts resulting from Site Access Option 1 and 2 under Alternative D would be the same as Alternative A (Section 4.12.1).

4.12.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Development at the Anderson Site

Construction

There are no reported hazardous materials spills, violations, or instances of recorded contamination within the Anderson Site. However, as discussed under Alternative A, construction personnel could encounter contamination during construction-related earth moving activities. The unanticipated discovery of contaminated soil and/or groundwater during construction is a potentially significant effect. BMPs presented in **Section 2.3.2** would minimize or eliminate adverse effects during construction of Alternative E.

As with Alternative A, construction of Alternative E would involve the use of routine hazardous materials typical of construction activities, which could result in a potentially significant effect without implementation of control measures. As discussed in **Section 4.12.1**, BMPs for the storage and handling of hazardous materials are provided in **Section 2.3.2**. Adherence to these BMPs would minimize the risk of inadvertent release and, in the event of a contingency, minimize adverse effects. With these BMPs, Alternative E would result in less-than-significant effects associated with hazardous materials during construction.

Operation

The types and amounts of hazardous materials that would be used, generated, and stored during the operation of Alternative E would be similar to those of Alternative A. Refer to **Section 4.12.1** for a description of potentially significant effects resulting from hazardous materials usage and storage during operation. BMPs provided in **Section 2.3.2** will reduce potentially significant effects from the use of hazardous materials during the operation of the casino resort to less-than-significant levels.

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative E would be the same as Alternative A (refer to **Section 4.12.1**).

4.12.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Construction

Alternative F would consist of the expansion of the Tribe's existing Win-River Casino and the addition of a 7-story parking garage. As under Alternative A, construction personnel could encounter unanticipated contamination during construction-related earth moving activities associated with Alternative F. The unanticipated discovery of contaminated soil and/or groundwater is a potentially significant effect. The BMPs presented in **Section 2.3.2** would minimize or eliminate effects associated with unanticipated discovery of contaminated soil and/or groundwater during construction of Alternative F.

As with Alternative A, construction of Alternative F would involve the use of routine hazardous materials typical of construction activities, which could result in a potentially significant effect without implementation of control measures. As discussed in **Section 4.12.1**, BMPs for the storage and handling of hazardous materials are provided in **Section 2.3.2**. Adherence to these BMPs would minimize the risk of inadvertent release and, in the event of a contingency, minimize adverse effects. With these BMPs, Alternative F would result in less-than-significant effects associated with hazardous materials during construction.

Operation

The type and amounts of hazardous materials that would be used, generated, and stored during the operation of Alternative F would not differ significantly from current levels. With proper handling and incorporation of BMPs provided in **Section 2.3.2**, Alternative F would result in less-than-significant effects associated with hazardous materials during operation.

4.12.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under the No Action Alternative, neither the Strawberry Fields nor the Anderson Site would be taken into trust. No development would occur on either site, and no expansion would occur on the Win-River Casino Site. No significant effects from the use, storage, or handling of hazardous materials would result from this alternative.

4.13 AESTHETICS

This section identifies the direct effects associated with aesthetics that would result from the development of each alternative described in **Section 2.0**. Effects are measured against the environmental baseline presented in **Section 3.13**. Indirect and cumulative effects are identified in **Section 4.14** and **Section 4.15**, respectively.

Assessment Criteria

Assessing the impacts of a project on visual resources is in large part subjective by nature. The impact to the viewsheds will be defined by the magnitude of the visual impact in terms of distance, viewer position, and the frequency of views. A project would have significant adverse effects if the development would degrade or diminish the aesthetics of visual resources such as scenic vistas, introduce lighting that would substantially increase the nighttime lighting in the area of existing conditions, and/or cast a shadow on private residences or public areas for substantial portions of the day.

4.13.1 ALTERNATIVE A – PROPOSED PROJECT

Development at the Strawberry Fields Site

Construction Impacts

Equipment and material staging would be visible during construction activities on the Strawberry Fields Site. During this time, heavy construction equipment, materials, and work crews would be readily visible to neighboring recreational and commercial use areas, as well as from vehicles traveling along Interstate 5 (I-5). Aesthetic impacts from construction would be temporary in nature. As discussed in **Section 3.13**, there are no scenic resources within the site and vicinity, therefore, construction would not obstruct views of scenic resources. Therefore, construction of Alternative A would not result in significant effects associated with visual resources.

Operational Impacts

Alternative A would change the existing views of the northern portion of the Strawberry Fields Site from open fields and vegetation to a casino, resort, and retail complex, while the central and southern portions of the site will remain as undeveloped open space. Proposed facilities include a casino, hotel, sporting goods retail store, and conference events centers. The most visually dominant feature of Alternative A would be the 119 feet high, 9-story hotel tower. An architectural rendering of Alternative A is presented as **Figure 2-9**. The architecture of the proposed structures would incorporate native materials and colors and would be enhanced by landscaping using plants native to the region to be visually cohesive with surrounding land uses.

Alternative A would considerably increase the level of human-made elements on the existing landscape of the Strawberry Fields Site, which currently has no buildings or development. The proposed development

would substantially alter the visual character of the northern portion of the site by transforming it from rural, undeveloped greenspace along the Sacramento River to commercial development. However, the proposed development would not be out of character with typical roadside development adjacent to I-5 (such as large commercial developments, including the Mt. Shasta Mall, located along I-5 within the City of Redding), nor would it impede views of scenic resources. Additionally, Alternative A would not result in the removal of any mature trees and the majority of the site (approximately 80 percent), would remain in undeveloped open space (note that the leachfield proposed under Wastewater Option 2 shown in **Figure 2-8** would not be visible). By clustering the proposed development in the north, near existing commercial development within the City, the visual effects of the project would be mitigated through the project design. Therefore, Alternative A would have a less-than-significant aesthetic impact. Specific effects to viewsheds in the vicinity of the Strawberry Fields Site as well as possible effects associated with shadow, light, and glare are discussed below. Design features included in **Section 2.3.2** would further reduce aesthetic impacts from implementation of Alternative A.

Effects on Viewsheds Surrounding the Project

Section 3.13 describes the viewsheds surrounding the Strawberry Fields Site (**Figure 3.13-2**). The following is a brief analysis of the changes to each viewpoint that would occur from implementation of Alternative A:

Viewpoint A

This view would be experienced by residences to the immediate south of the Strawberry Fields Site along Smith Road and the rural driveway (Adra Road). As shown in **Figure 4.13-1**, under Alternative A the view from Viewpoint A would change from one of rural open pasture space to one with rural open pasture space in the foreground and commercial development in the background. It should be noted that the visual simulations shown in **Figure 4.13-1** are from above the tree line to more easily show the change to the viewshed; however, the change to the viewshed from typical ground-level receptors will be lesser than as shown by these renderings. This change would be partially impeded by vegetation and would occur at the most northern end of the property, between 0.5 to 0.75 miles from the residences, lessening views of project-related development. Therefore, a less-than-significant impact would occur for Alternative A from this viewpoint.

Viewpoint B

This view would be typical for commuters traveling north along I-5. Under Alternative A, the view from the nearby interstate would change from one of mostly open space and scattered trees to one containing commercial development in the northern portion of the Strawberry Fields Site (**Figure 4.13-2**). Views of the southern portion of the Strawberry Fields Site would remain unchanged, as the proposed leach field would not result in aboveground development. The potential southern access roadway would alter the



Before



After



Before



After

site, but it would be parallel to I-5 and near the eastern boundary of the Strawberry Fields Site (as shown in **Figure 4.13-2**), and would not alter the character of the majority of the Strawberry Fields Site, located west of the south access road. While the casino and hotel development would represent a major alteration, travelers would only experience the altered view for a short time due to high motorist speeds. Therefore, a less-than-significant impact would occur for Alternative A from this viewpoint.

Viewpoint C

Viewshed C is experienced by the residences north of the Strawberry Fields Site along Bechelli Lane. The viewshed is characterized by power lines, thick trees, and overgrown vegetation, which would serve as partial screening. As shown in **Figure 4.13-3**, Alternative A would result in alteration of the existing rural viewshed; however, views of the project from the north would be mostly screened by existing trees. In most cases, the proposed hotel tower would be the most prominent new visual feature. Therefore, a less-than-significant impact would occur for Alternative A from this viewpoint.

Viewpoint D

This viewshed is experienced by residences bordering the western bank of the Sacramento River. As shown in **Figure 4.13-4**, the hotel tower and parking garage may be partially visible above the tree line in the distance from these residences. While this change would represent an alteration, views of the development would be partially screened by existing vegetation and the dominant views of undeveloped open space in the southern areas of the site that are directly across the river from these residences would remain unchanged. Additionally, the distance from this viewpoint to the proposed development is approximately 2,000 feet; therefore, the multi-story structures would appear visually smaller than if these receptors were closer to the Strawberry Fields Site. A less-than-significant impact would occur for Alternative A from this viewpoint.

Viewpoint E

Viewshed E is experienced by the motorists traveling along South Bonnyview Road, north of the Strawberry Fields Site. The viewshed is characterized by the Sacramento River, thick trees, and mature vegetation, which would serve as partial screening. Alternative A would result in alteration of the existing rural viewshed as views of the riverbank would now include commercial development in the background (**Figure 4.13-5**). However, views of the proposed development would be partially screened by existing trees, and the dominant views of the river and adjacent riparian habitats would be unimpeded. Therefore, a less-than-significant impact would occur for Alternative A from this viewpoint.

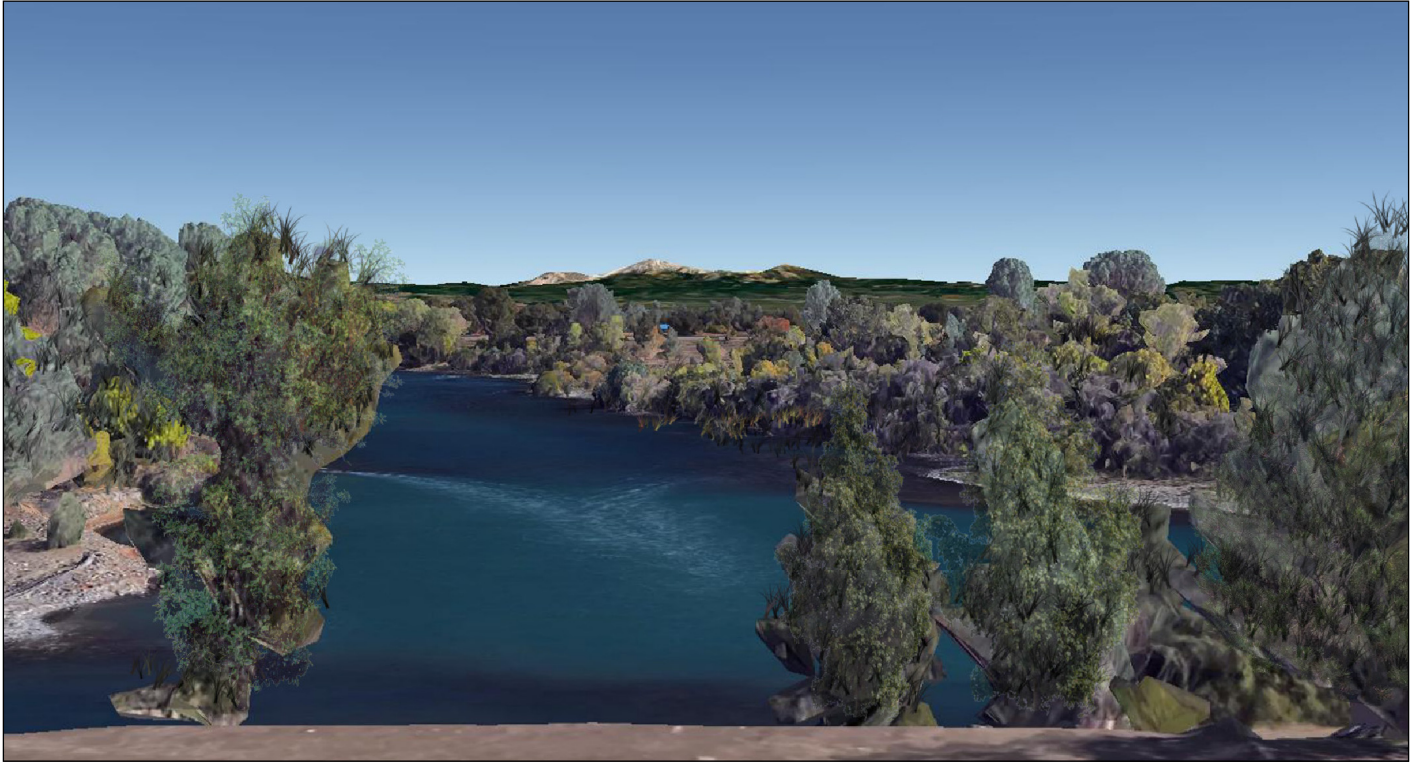
Additionally, with the incorporation of design features provided in **Section 2.3.2**, Alternative A would not result in significant adverse effects to viewsheds surrounding the Strawberry Fields Site.



Before



After



Before



After



Before



After

Shadow, Light, and Glare

A significant effect from shadows would result if the proposed development were to cast a shadow on private residences or public areas for substantial portions of the day. The nearest off-site buildings to the development footprint of Alternative A are residences located approximately 360 feet to the northwest of the Strawberry Fields Site boundary. As shown in **Figure 2-8**, the hotel tower, the tallest proposed building, will be located in the southern-most portion of the development area, therefore, the building is not near enough in proximity to cast shadows on any private residences or public areas.

Alternative A would introduce new sources of light into the existing setting. Light spillover into surrounding areas and increases in regional ambient illumination could result in potentially significant effects if it were to cause traffic safety issues or create a nuisance to sensitive receptors. Illuminated signage and light from occupied hotel rooms would be visible from surrounding areas at night and would have the potential to significantly alter the nighttime lighting environment within surrounding properties.

Additionally, the use of glass panels and reflective ornamental detailing could increase the glare to travelers on I-5, and adjacent properties. The potential for Alternative A to produce light and glare in the vicinity is a potentially significant adverse effect. Design features presented in **Section 2.3.2** are consistent with both the International Dark-Sky Association's Model Lighting Ordinance and the Unified Facilities Criteria and would reduce this potential impact to a less-than-significant level (IDA, 2011).

Off-site Access Improvements

Construction Impacts

Similar to the Strawberry Fields Site construction, equipment and material staging would be visible during construction activities on the North and South Access Improvement Areas. Aesthetic impacts from construction would be temporary in nature. Therefore, construction of Site Access Options 1 and 2 under Alternative A would not result in significant effects associated with visual resources.

Operational Impacts

A site plan for Alternative A, including the North and South Access Improvement Areas, presented in **Figure 2-8**, shows the proposed improvements of Bechelli Lane and existing rural driveway. Accordingly, Site Access Options 1 and 2 would not result in a major alteration of the existing viewshed; Bechelli lane and the existing rural driveway will both remain as local roadways and no impact would occur to surrounding viewsheds as a result of the Proposed Project operation.

Shadow, Light, and Glare

Improvements to the North and South Access Improvement Areas would not create additional shadows or introduce new sources of light into the existing setting. Accordingly, the Site Access Options 1 and 2 operation would not result in significant impacts resulting from shadow, light, or glare.

Renovation of Existing Casino for Tribal Governmental Uses

Under Alternative A, the existing Win-River Casino would be converted to tribal governmental uses. Because no exterior improvements or construction activities would occur, no aesthetics impacts would occur.

4.13.2 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE Development at the Strawberry Fields Site

Construction Impacts

Impacts from the development of Alternative B would be the same as Alternative A, but on a reduced scale. Therefore, construction of Alternative B would not result in significant adverse effects associated with visual resources.

Operational Impacts

Impacts to viewsheds resulting from Alternative B would be similar, with the exception of the 130,000-square foot (sf) sports retail center and associated surface parking. The exclusion of the sports retail and associated parking would lessen the visual impact of Alternative B from surrounding viewpoints, especially views from the north. Similar to Alternative A, no scenic resources would be adversely affected from development of Alternative B. However, design features are included in **Section 2.3.2** to further reduce aesthetic-related impacts.

Effects on Viewsheds Surrounding the Project

Under Alternative B, effects on viewsheds surrounding the Strawberry Fields Site would be similar to those discussed under Alternative A, but reduced due to the exclusion of the sports retail center and associated surface parking. As described under Alternative A, the views of the Strawberry Fields Site would change from open space and scattered vegetation to extensive commercial development and paved lots. Development of Alternative B would result in significant alteration of existing rural viewsheds; however, Alternative B would be partially screened by large oak trees and other vegetation and landscaping and would be compatible with the existing commercial development along the I-5 corridor. Therefore, Alternative B would not result in significant adverse effects to viewsheds surrounding the Strawberry Fields Site. Additionally, with the incorporation of design features provided in **Section 2.3.2**, Alternative B would not result in significant adverse effects to viewsheds surrounding the Strawberry Fields Site.

Shadow, Light, and Glare

Compared to Alternative A, Alternative B would cast fewer shadows over residences northwest of the Strawberry Fields Site in the early morning, due to the exclusion of the sports retail center in the northern portion of the site. Therefore, similar to Alternative A, shadow from the development would not result in significant adverse effects to residences north or south of the site.

The development of Alternative B would introduce new sources of light and glare as described under Alternative A. However, with implementation of the design features provided in **Section 2.3.2**, Alternative B would not result in significant adverse effects associated with light emissions and glare.

Off-site Access Improvements

Impacts to aesthetics resulting from Site Access Options 1 and 2 under Alternative B would be the same as Alternative A (**Section 4.13.1**).

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative B would be the same as Alternative A (**Section 4.13.1**).

4.13.3 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Development at the Strawberry Fields Site

Construction Impacts

Impacts from the development of Alternative C would be the same as Alternative A, but on a reduced scale. Therefore, construction of Alternative C would not result in significant adverse effects associated with visual resources.

Operational Impacts

Impacts to viewsheds resulting from Alternative C would be similar, but on a reduced scale. The hotel, sports retail, events center, conference center, and parking would be the same as under Alternative A, but the casino and food and beverage area would be reduced in size. Similar to Alternative A, no scenic resources would be adversely affected from development of Alternative C. However, design features are included in **Section 2.3.2** to further reduce aesthetic impacts.

Effects on Viewsheds Surrounding the Project

Effects on viewsheds surrounding the Strawberry Fields Site under Alternative C would be similar to those discussed under Alternative A, but on a reduced scale. As described under Alternative A, the views of the Strawberry Fields Site would change from open space and scattered vegetation to extensive commercial development and paved lots. Development of Alternative C would result in significant alteration of existing rural viewsheds; however, Alternative C would be partially screened by large oak trees and other vegetation and landscaping and would be compatible with the existing commercial development along the I-5 corridor. Additionally, with the incorporation of design features provided in **Section 2.3.2**, Alternative C would not result in significant adverse effects to viewsheds surrounding the Strawberry Fields Site.

Shadow, Light, and Glare

Structures proposed under Alternative C would cast a smaller shadow than those proposed under Alternative A due to the reduction in size of the casino and food and beverage area. Because this reduces the already low chance of shade spillover onto surrounding properties, Alternative C would not result in significant adverse effects associated with shadows.

The development of Alternative C would introduce new sources of light and glare as described under Alternative A. However, with implementation of design features provided in **Section 2.3.2**, Alternative C would not result in significant adverse effects associated with light emissions and glare.

Off-site Access Improvements

Impacts to aesthetics resulting from Site Access Options 1 and 2 under Alternative C would be the same as Alternative A (**Section 4.13.1**).

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative C would be the same as Alternative A (**Section 4.13.1**).

4.13.4 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Development at the Strawberry Fields Site

Construction Impacts

The development proposed under Alternative D would result in similar, yet less intensive, construction on the Strawberry Fields Site as Alternative A. The main visual element, the casino building, along with the event and conference centers, would not be developed under Alternative D. Therefore, construction of Alternative D would not result in significant adverse effects associated with visual resources.

Operational Impacts

Impacts to viewsheds resulting from Alternative D would be similar, although lessened, when compared with Alternative A. The removal of the approximately 69,541-sf casino building, 52,200-sf events center, and 10,080-sf conference center would significantly lessen the visual impact of Alternative D from surrounding viewpoints. Although less significant than Alternative A, development of Alternative D would result in significant alteration of existing rural viewsheds. However, similar to Alternative A, Alternative D would not affect any sensitive visual resources, and would therefore have a less-than-significant aesthetic impact. Additionally, design features are included in **Section 2.3.2** to further reduce aesthetic impacts.

Effects on Viewsheds Surrounding the Project

Effects on viewsheds surrounding the Strawberry Fields Site under Alternative D would be similar to those discussed under Alternative A, with the exception of the casino building, and event and conference centers, which would not be present under Alternative D. As described under Alternative A, the views of the Strawberry Fields Site would change from one of open space and scattered vegetation, to one of commercial development consisting of hotel and retail facilities. Development of Alternative D would result in significant alteration of existing grassland viewsheds; however, the proposed hotel would be partially screened by large oak trees and other vegetation and landscaping and would be compatible with the existing commercial development along the I-5 corridor. Additionally, with the incorporation of design features provided in **Section 2.3.2**, Alternative D would not result in significant adverse effects to viewsheds surrounding the Strawberry Fields Site.

Shadow, Light, and Glare

Structures proposed under Alternative D would cast a smaller shadow than those proposed under Alternative A due to the exclusion of the casino building, and event and conference centers. Because this reduces the already low chance of shade spillover onto surrounding properties, Alternative D would not result in significant adverse effects associated with shadows.

The development of Alternative D would introduce new sources of light and glare as described under Alternative A. However, with implementation of the design features provided in **Section 2.3.2**, Alternative D would not result in significant adverse effects associated with light emissions and glare.

Site Access Option 1 and 2

Impacts to aesthetics resulting from Site Access Options 1 and 2 under Alternative D would be the same as Alternative A (**Section 4.13.1**).

4.13.5 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

Development at the Anderson Site

Construction Impacts

Equipment and material staging would be visible during construction activities on the Anderson Site. During this time, heavy construction equipment, materials, and work crews would be readily visible to neighboring recreational and commercial use areas, as well as from vehicles traveling along I-5. Aesthetic impacts from construction would be temporary in nature. As discussed in **Section 3.13**, there are no scenic resources within the site and vicinity, therefore, construction would not obstruct views of scenic resources. Therefore, construction of Alternative E would not result in significant effects associated with visual resources.

Operational Impacts

Alternative E would change the existing views of the site from open fields and vegetation to a casino, resort, and retail complex. Development of Alternative E would encompass approximately 1,107,773 sf of the Anderson Site. Proposed facilities include a casino, hotel, dining, sports retail, event center, and conference center. The most visually dominant feature of Alternative E would be the 119-foot high 9-story hotel tower.

An architectural rendering of Alternative E, presented as **Figure 2-17**, shows the architecture of the proposed structures would incorporate native materials and colors and would be enhanced by landscaping using plants native to the region to be visually cohesive with surrounding land uses. However, it would considerably increase the level of human-made elements on the existing landscape of the Anderson Site, which currently has no buildings or development. Although the proposed development would alter the colors, lines, and texture of the landscape vegetation of the Anderson Site, the changes would not be out of character with typical roadside development adjacent to I-5, would not affect any sensitive visual resources, and would therefore have a less-than-significant aesthetic impact. Additionally, design features are included in **Section 2.3.2** to further reduce aesthetic impacts.

Effects on Viewsheds Surrounding the Project

Section 3.13 describes the viewsheds surrounding the Anderson Site (**Figure 3.13-4**). The following is a brief analysis of the changes to each viewpoint that would occur from implementation of Alternative E:

Viewpoint A

Viewpoint A represents a viewshed experienced by the residential subdivision immediately to the west of the Anderson Site. As shown in **Figure 4.13-6**, the view from these residences would change from one of rolling hills in the background to one of commercial development consisting of the casino and hotel complex; however, the large oak trees bordering the Anderson Site would serve as partial screening of the proposed development under Alternative E. It should be noted that the visual simulations shown in **Figure 4.13-6** are from above the tree line to more easily show the change to the viewshed; however, the change to the viewshed from typical ground-level receptors will be lesser than as shown by these renderings. Therefore, a less-than-significant impact would occur as a result of Alternative E to this viewpoint.

Viewpoint B

Viewpoint B represents a viewshed experienced by commuters traveling north along I-5 to the east of the Anderson Site. The view from the nearby interstate would change from one of mostly open space and scattered oak trees to one containing commercial development consisting of a casino-hotel complex (**Figure 4.13-7**). While this change would represent an alteration, travelers would only experience the altered view for a short time due to high motorist speeds. Additionally, the large oak trees bordering the Anderson Site would continue to serve as partial screening of the Anderson Site under Alternative E.



Before



After



Before



After

Therefore, a less-than-significant impact to aesthetics would occur as a result of Alternative E to this viewpoint.

Viewpoint C

Viewpoint C represents a viewshed experienced by local commercial businesses 0.1 miles north of the Anderson Site. Views are currently dominated by roadways and dense vegetation. As shown in **Figure 4.13-8**, the view from viewpoint C would not substantially change as the proposed development would be partially shielded by existing oak trees bordering the Anderson Site. Therefore, a less-than-significant impact to aesthetics would occur as a result of Alternative E to this viewpoint.

Design features provided in **Section 2.3.2** would ensure that effects to viewsheds surrounding the Anderson Site would be less than significant.

Shadow, Light, and Glare

The nearest buildings off site are residences located approximately 400 feet west of the hotel tower, the tallest proposed building. Therefore, due to the location of the hotel tower, shadows would not be cast on any private residences or public areas.

Alternative E would introduce new sources of light into the existing setting. Illuminated signage and light from occupied hotel rooms would be visible from surrounding areas at night and would have the potential to significantly alter the nighttime lighting environment within surrounding properties. Additionally, the use of glass panels and reflective ornamental detailing could increase the glare to travelers on I-5 and adjacent properties. The potential for Alternative E to produce light and glare in the vicinity is a potentially significant adverse effect, however, design features presented in **Section 2.3.2** would reduce this potential impact to a less-than-significant level.

Renovation of Existing Casino for Tribal Governmental Uses

Impacts resulting from the renovation of the existing casino under Alternative E would be the same as Alternative A (**Section 4.13.1**).

4.13.6 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Construction Impacts

Alternative F involves the expansion of the Tribe's existing Win-River Casino. Similar to Alternative A, aesthetic-related impacts from construction would be temporary in nature and would not result in obstructed views of scenic resources. Therefore, construction of Alternative F would not result in significant adverse effects associated with visual resources.



Before



After

Operational Impacts

Alternative F involves the expansion of the existing Win-River Casino and the addition of an event center and 7-story parking garage. Full implementation of Alternative F would expand the casino-resort by 10,000 sf and add 1,710 new parking spaces. The dominant visual change resulting from Alternative E would result from the addition of the 604,500-sf parking garage.

Alternative F would result in a visually cohesive development similar to, but on a larger scale than, the existing Win-River Casino. The amount of human-made elements on the existing landscape of Win-River Casino Site would increase. Though the proposed development would alter the colors, lines, and texture of the landscape vegetation currently on site, the site-specific visual effects would not be significant, as the resulting product would look very similar to the existing setting. Development under Alternative F would not adversely affect scenic resources or significantly alter the visual character of the site. Design features specified in **Section 2.3.2** would further reduce visual effects.

Effects on Viewsheds Surrounding the Project

Section 3.13 describes the viewsheds surrounding the Win-River Casino Site. Analysis of potential impacts to each viewpoint (shown in **Figure 3.13-6**) resulting from Alternative F is presented below.

Viewpoint A

Viewpoint A represents a viewshed experienced by travelers along State Route 273 (SR-273) to the east of the Win-River Casino Site. The view from these residences would change from one of a paved parking lot to one of additional commercial development consisting of a 7-story parking garage and an event center. However, the proposed development would look very similar to the existing setting, therefore, a less-than-significant impact would occur for Alternative F.

Viewpoint B

Viewpoint B represents a viewshed experienced by residences across the Anderson-Cottonwood Canal. The view from these residences would not change as the expansion would be shielded by trees and the distance from the Win-River Casino Site further decreases the views of the casino. Therefore, a less-than-significant impact would occur for Alternative F.

Viewpoint C

Viewpoint C represents a viewshed from the far west side of the Win-River Casino Site. The view from the residences would change from one of a paved parking lot, to one of to one of additional commercial development consisting of a 7-story parking garage and an event center. However, the proposed development would look very similar to the existing development on site; therefore, a less-than-significant impact would occur for Alternative F.

Design features provided in **Section 2.3.2** would ensure that effects to viewsheds surrounding the Win-River Casino Site would be less than significant.

Shadow, Light, and Glare

The existing casino development is a substantial source of light and glare in the project area. Therefore, new lighting proposed under Alternative F would not result in significant adverse effects related to light and glare. Design features presented in **Section 2.3.2** would further minimize identified effects.

4.13.7 ALTERNATIVE G – NO ACTION ALTERNATIVE

No changes or impacts would occur to visual resources under the No Action Alternative. The alternative sites would remain in their current state and no new development would occur. Therefore, the No Action Alternative would have no effect on aesthetics or visual resources in the vicinity of the alternative sites.

4.14 INDIRECT AND GROWTH-INDUCING EFFECTS

The Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) require that an Environmental Impact Statement (EIS) analyze both the indirect and the “growth-inducing” effects of a Proposed Project (40 Code of Federal Regulations [CFR] Section 1502.16 [b], 40 CFR Section 1508.8 [b]).

...indirect effects...are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on...natural systems.

Direct impacts, caused by the action and occurring at the same time and place as the action, have been discussed in **Sections 4.2 through 4.13**, and cumulative impacts measured in conjunction with other reasonably foreseeable projects, whether past, present, or future, are addressed in **Section 4.15**. The potential indirect effects of off-site traffic mitigation and utility improvements, including water, wastewater, electricity, and natural gas infrastructure, are integral to the development of Alternatives A, B, C, D, E, and F are discussed in **Section 4.14.1** and **4.14.2**, respectively, and growth-inducing effects are discussed in **Section 4.14.3**. Mitigation measures in **Section 5.0** and design features and Best Management Practices (BMPs) in **Section 2.3.2** would ensure potential indirect effects associated with proposed alternatives are minimized. In addition, off-site improvements may require obtaining approvals and permits from jurisdictional agencies, including potential California Environmental Quality Act (CEQA) compliance.

4.14.1 INDIRECT EFFECTS FROM OFF-SITE TRAFFIC MITIGATION IMPROVEMENTS

Alternatives A through D (Strawberry Fields Site)

Implementation of any alternative on the Strawberry Fields Site would require construction of traffic mitigation improvements.¹ A detailed description of off-site traffic mitigation for each alternative is provided in **Section 5.8**. Off-site traffic mitigation improvement designs are conceptual at this time. Design and construction plans would be prepared after an alternative has been selected for development.

Traffic mitigation improvements are recommended at the following study intersections:

- South Bonnyview Road / Bechelli Lane (Intersection 3);
- South Bonnyview Road / Interstate 5 (I-5) Southbound (SB) Ramps (Intersection 4);

¹ Environmental consequences of construction in the Off-site Access Improvement Areas, as identified in **Section 2.0** as a proposed component of Alternatives A through D, have already been analyzed and discussed as direct effects in **Section 4.2 through Section 4.13**.

- South Bonnyview Road / I-5 Northbound (NB) Ramps (Intersection 5);
- South Bonnyview Road / Churn Creek Road (Intersection 6);
- Churn Creek Road / Victor Avenue (Intersection 8); and
- Churn Creek Road / Rancho Road (Intersection 9).²

The location of the above intersections is shown on **Figure 4.14-1**. The recommended improvements vary depending on the proposed alternative, as described in **Section 5.8**. Some kinds of improvements, such as restriping, would not require construction and therefore would not generate indirect impacts. As such, these improvements are not discussed in this section.

Alternative E (Anderson Site)

Traffic mitigation improvements are recommended at the following study intersections:

- North Street / Oak Street (Intersection 18);
- North Street / I-5 SB Off-Ramp (Intersection 19);
- North Street / McMurray Drive and I-5 NB Off-Ramp (Intersection 20); and
- Balls Ferry Road / Oak Street (Intersection 21).

The location of the above intersections is shown on **Figure 4.14-1**.

Alternative F (Win-River Casino Site)

No traffic mitigation improvements are recommended.

Alternatives A through D – Environmental Consequences

The following section identifies the potential indirect environmental effects of construction of off-site traffic mitigation under Alternatives A through D. Off-site projects would require obtaining approvals and permits from the City of Redding (City), California Department of Transportation (Caltrans), and/or Shasta County (County) and may be subject to CEQA, which requires additional environmental review prior to approval. Implementation of permitting and CEQA requirements would further reduce the potential for significant adverse impacts from off-site construction projects.

Pedestrian surveys of the potentially affected areas for the proposed traffic mitigation under Alternatives A-D were conducted by Analytical Environmental Services (AES) biologist Nicholas Bonzey and AES archaeologist Charlane Gross on June 29, 2017, with one exception. Intersection 6 (South Bonnyview Road / Churn Creek Road) was added to the list of potential off-site traffic mitigation improvements

² Mitigation to improve Churn Creek Road / Alrose Lane (Intersection 7) is also proposed; however, it entails improvements to the intersections of South Bonnyview Road / I-5 SB Ramps and South Bonnyview Road / Churn Creek Road. No alterations to Churn Creek Road / Alrose Lane are needed to improve the operation of this intersection.

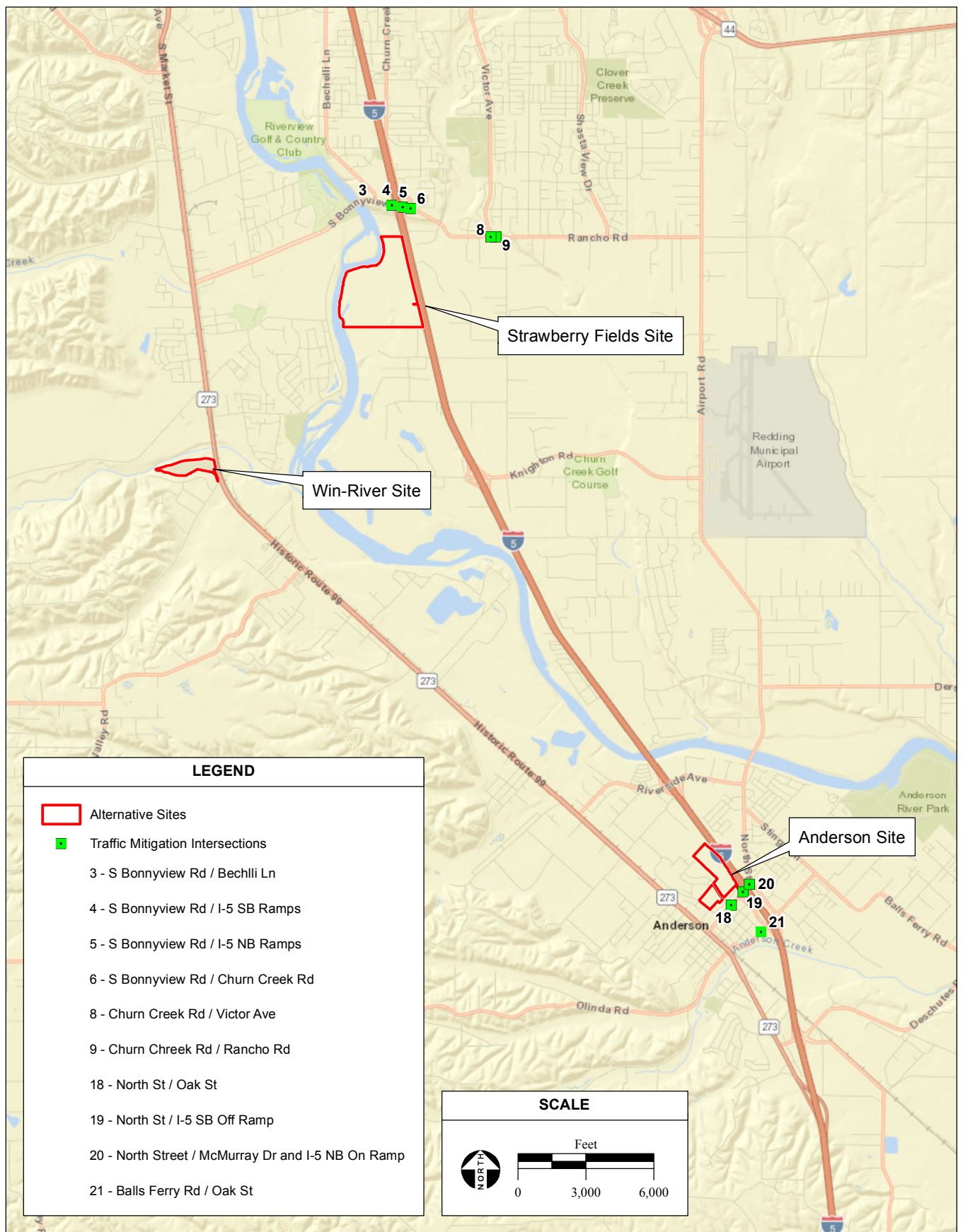


Figure 4.14-1
Traffic Mitigation Locations

subsequent to the field surveys.³ Background research indicates that the northern portion of Intersection 6 was previously surveyed for cultural resources, but the southern portion has not been surveyed; this will be required prior to any development. Elsewhere, resources with the potential to be disturbed during off-site traffic mitigation improvements were identified and their location recorded for all alternatives. As discussed in more detail below, traffic mitigation improvements are not anticipated to result in adverse environmental effects.

Geology and Soils

The construction of roadway improvements may require grading and the introduction of fill material. The increase in impervious surfaces and additional cut-and-fill embankments could result in erosion of soils. Stable fill material, engineered embankments, and erosion control features would be used to reduce the potential for slope instability, subsidence, and erosion in accordance with the jurisdictional agency (Caltrans, County, and the City) requirements for roadway construction. Watering during grading activities would mitigate the effect of wind erosion to the underlying soils. In addition, in accordance with the federal Clean Water Act (CWA), any construction of roadway improvements over one acre in area would be required to comply with the National Pollutant Discharge Elimination System (NPDES) permit program. To comply with the NPDES program, a Stormwater Pollution Prevention Plan (SWPPP) would be developed that would include soil erosion and sediment control practices to reduce the amount of exposed soil, prevent runoff from flowing across disturbed areas, slow runoff from the site, and remove sediment from the runoff.

With standard construction practices and specifications required by the jurisdictional agency and the NPDES General Construction Permit Program as well as BMPs and mitigation included in **Section 5.2**, there would be no adverse effects to geology and soils as a result of off-site traffic mitigation under Alternatives A, B, C, or D.

Water Resources

Construction of traffic mitigation improvements could increase impervious surfaces and modify drainage patterns. Potential effects include an increase in surface runoff and increased erosion, which could cause localized flooding and adversely affect surface water quality due to increases in sediment and roadway pollutants such as grease and oil.

As discussed above, construction of roadway improvements that exceed one acre of land would be required to comply with the NPDES General Construction Permit Program, including through the

³ Although Intersection 6 (South Bonnyview Road / Churn Creek Road) was not surveyed for biological and cultural resources at the time as the traffic mitigation survey, a desktop review of the intersection, including review of aerial photographs, indicates that it is similar in nature to the other traffic mitigation intersections surveyed at that time. As part of implementation of the traffic mitigation measures provided in **Section 5.0**, the City, as the jurisdictional agency, will approve the traffic improvements and conduct construction activities per local and State guidelines, including compliance with CEQA.

development of a SWPPP that would include soil erosion and sediment control practices to reduce the amount of exposed soil, prevent runoff from flowing across disturbed areas, slow runoff from the site, and remove sediment from the runoff.

Curb and gutters, inlets, and other drainage facilities would be constructed to meet the standards of the jurisdictional agency and provide adequate facilities to direct stormwater runoff. With incorporation of these drainage features and compliance with the soil erosion and sediment control practices identified in the SWPPP and erosion control mitigation included in **Section 5.2**, effects to water resources would be less than significant. Therefore, there would be no significant indirect effects to water resources as a result of off-site traffic mitigation under Alternative A, B, C, or D.

Air Quality

Development of roadway improvements would result in short-term, construction-related air pollutant emissions. The construction phase would produce two types of air contaminants: exhaust emissions from construction equipment and fugitive dust generated as a result of demolition and soil movement. Due to the small size of roadway improvements compared to the alternatives on the Strawberry Fields Site, emissions related to the construction of traffic improvements would be less than those associated with the construction of the project. With incorporation of BMPs to reduce fugitive dust and construction equipment emissions (refer to **Section 2.3.2**) including watering of the site to reduce wind erosion, air quality impacts will be less than significant.

Operational effects would occur if the roadway improvements resulted in localized increases in carbon monoxide (CO) concentrations or if the roadway improvements contributed to traffic congestion at large intersections. However, it is expected that the roadway improvements would reduce congestion and improve traffic flow. With the improved circulation resulting from traffic mitigation, level of service (LOS) would be improved, thereby reducing idling time and associated vehicle emissions. The operational effects of the traffic improvements would therefore be less than significant.

Biological Resources

Intersections 3, 4, 5, 6, 8 and 9 (South Bonnyview Road / Bechelli Lane, South Bonnyview Road / I-5 SB Ramps, South Bonnyview Road / I-5 NB Ramps, South Bonnyview Road / Churn Creek Road, Churn Creek Road / Victor Avenue, and Churn Creek Road / Rancho Road) are currently paved and developed with ruderal/disturbed shoulders and/or roadsides on one or both sides of the road (for intersection numbers and locations, refer to **Figure 4.14-1**). Ruderal/disturbed areas contain sparse vegetation consisting predominately of non-native grass species, and the areas are heavily disturbed by vehicle traffic. Habitats within the areas of impact provide very limited habitat to wildlife and are not considered critical or sensitive. Construction of traffic mitigation improvements (as detailed in **Section 5.8**) at Intersections 3, 4, 5, 6, and 8 would not significantly impact wildlife habitat, critical habitat, special-status species, migratory birds, or wetlands or Waters of the U.S.

At Intersection 9 (Churn Creek Road / Rancho Road), a manmade drainage is located along the northern roadside of Rancho Road. Should this drainage be impacted during construction of proposed intersection improvements, consultation with the United States Army Corps of Engineers (USACE) will occur to determine if the drainage is a Water of the U.S. Impacts to potential Waters of the U.S. will be reduced to less-than-significant levels with implementation of mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP and permitting.

Cultural Resources

Efforts to document cultural resources (refer to **Section 3.6**) included background research conducted by the Northeast Information Center (NEIC) on February 2, 2016 for a review of previously identified archaeological sites and surveys within a 0.5-mile radius of the Strawberry Fields Site. These results included all but two of the traffic mitigation intersections (Intersections 8 and 9). Therefore, a new NEIC search was completed for Intersections 8 and 9 on June 29, 2017. It showed that those intersections were subject to a previous survey (Brunmeier and Scholze, 2006) which did not identify any cultural resources. Since then, Intersection 6 has been added; a review of previous record search information indicates that the area north of Intersection 6 has been surveyed. Collectively, the NEIC searches identified one archaeological site, CA-SHA-266, which would be impacted by traffic mitigation improvements at Intersection 3 (South Bonnyview Road and Bechelli Lane). This site has been found eligible for listing on the National Register of Historic Places (NRHP; Clewett, 1975a; Clewett, 1975b; Vaughan, 1997; Vaughan and McGann, 1996).

AES completed a pedestrian survey of the traffic mitigation sites on June 29, 2017, except for Intersection 6. Wherever possible, the 200 feet proximate to each intersection was examined in concert with the mitigation measures proposed in **Section 5.8**, i.e. if the mitigation required the construction of a new right turn lane, then a 200-foot long by 20-foot wide corridor was examined adjacent to the extant turn lane. This area was considered to be the Area of Potential Effects (APE). However, examination of the full APE was not always possible due to commercial, residential, or roadway development.

Construction of proposed traffic improvements at Intersection 3 for the Strawberry Fields Site (Alternatives A, B, C, and D) could adversely affect archaeological site CA-SHA-266. No other cultural resources have been identified within the APE for any of the other intersections proposed for traffic-related improvements under Alternatives A, B, C, or D.

Impacts to CA-SHA-266 must be resolved by the development and implementation of an agreement document under Section 106 of the National Historic Preservation Act (NHPA), as described in mitigation measures that are presented in **Section 5.6**. Implementation of the measures listed in **Section 5.6** would reduce effects to CA-SHA-266 to a less-than-significant level.

There is a possibility that previously unknown cultural and/or paleontological resources will be encountered during ground disturbing activities. This would be a potentially significant impact.

Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated archaeological discoveries. Implementation of avoidance and mitigation measures listed in **Section 5.6** would ensure that no significant effects to cultural resources would occur as a result of off-site traffic improvements.

Socioeconomic Conditions

Off-site traffic improvements would result in short-term disturbances to traffic flow and minor delays due to constricted traffic movement. Nearby businesses and residences would remain accessible throughout construction. The area of roadway impacts would be of a limited size and would not create negative socioeconomic effects. The intersection improvements would not result in long-term disruption of access to surrounding land uses or to minority or low-income populations. The fair share costs of these roadway improvements would be borne by the Tribe. Therefore, there would be no significant indirect effects to socioeconomic conditions as a result of off-site traffic mitigation under Alternatives A, B, C, or D.

Transportation/Circulation

Off-site traffic mitigation would result in beneficial effects to traffic circulation. Construction of off-site traffic improvements would be limited in scale and duration, resulting only in short-term disturbances to traffic flow. If construction activities require temporary lane closures to accommodate construction equipment, a traffic management plan would be prepared in accordance with the jurisdictional agency requirements, thus avoiding potentially adverse temporary effects.

Land Use

The majority of construction of roadway improvements would occur within existing right-of-ways (ROW) and would not conflict with surrounding land uses. Off-site traffic mitigation would be generally consistent with the City and County general plans. ROW acquisition for the South Bonnyview Road / Bechelli Lane intersection and other traffic improvements may be required. Adjacent property owners would be compensated at fair market values for land needed for ROW. The traffic improvements would not result in changes in land use inconsistent with the General Plans or other guiding documents. There would be no significant indirect effects to land use as a result of off-site traffic mitigation under Alternatives A, B, C, and D.

Public Services

Traffic improvements may require relocation of utilities near existing roadways. These utilities include overhead electricity lines and telecommunication lines. Relocation of these lines could result in a temporary break in service to some homes and businesses in the area. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are considered less than significant. Furthermore, each improvement would be completed to the standards of the agencies with jurisdiction over the intersection/roadway (Caltrans, City, and County). Off-site traffic improvements may result in short-term disturbances to law enforcement, fire, and emergency medical services as a result of road closures and access issues. Implementation of

emergency service coordination mitigation measures listed in **Sections 5.8.1** and **5.10.4** would ensure no significant indirect public service impacts would occur as a result of off-site traffic mitigation under Alternatives A, B, C, and D.

Noise

Construction of intersection improvements would result in minimal noise impacts. Any impacts that may occur would be reduced through Caltrans, County, and/or local regulations, including the imposition of construction hours and the use of noise abatement equipment. Construction activities are expected to occur during normal daytime hours. Most proposed transportation improvement locations are not located on residential streets or near other sensitive land uses, and therefore noise would not affect sensitive receptors. Accordingly, by implementing the BMPs included in **Section 2.3.2**, no significant indirect noise impacts would occur as a result of off-site traffic mitigation under Alternatives A, B, C, and D.

Hazardous Materials

The accidental release of hazardous materials used during grading and construction activities could pose a hazard to construction employees, surrounding residents, and the environment. Additionally, equipment used during grading and construction activities could ignite dry grasses and weeds on site. However, these hazards, which are common to construction activities, would be minimized with adherence to State and federal statutes and standard operating procedures, such as refueling in designated areas, storing hazardous materials in approved containers, clearing of dried vegetation, and proper initiation of response and clean-up measures. By following BMPs included in **Section 2.3.2**, potential indirect hazardous materials impacts from the construction of off-site traffic mitigation improvements would be less than significant for Alternatives A, B, C, and D.

Aesthetics

Visual effects would occur as the result of modification and expansion of existing roadways. However, because road improvements would be made in areas that are already developed with roadway networks (versus the construction of new roadways and utilities in previously undeveloped areas), changes to the visual setting would not be significant. Intersections and roadway segments would conform to the applicable City and County design standards. Aesthetic impacts resulting from construction of traffic mitigation improvements would be less than significant.

Alternative E – Environmental Consequences

The following section identifies the potential indirect environmental effects of construction of off-site traffic mitigation under Alternative E. Off-site projects would require obtaining approvals and permits from the City of Anderson and/or Caltrans and may be subject to CEQA, which requires additional environmental review prior to approval. Implementation of permitting and CEQA requirements would further reduce the potential for significant adverse impacts from off-site construction projects.

Surveys of the potentially affected areas for the proposed traffic mitigation under Alternative E were conducted by AES biologist Nicholas Bonzey and AES archaeologist Charlane Gross on June 29, 2017. These surveys were conducted on foot. Resources with the potential to be disturbed during off-site traffic mitigation improvements were identified and their location recorded for all alternatives. As discussed in more detail below, traffic mitigation improvements are not anticipated to result in adverse environmental effects.

Geology and Soils

The impacts to geology and soils would be similar to those described under Alternatives A through D. With mitigation specified in **Section 5.2**, impacts would be less than significant.

Water Resources

Impacts to water resources would be similar to those described under Alternatives A through D. With mitigation specified in **Section 5.2**, impacts would be less than significant.

Air Quality

Development of roadway improvements would result in similar short-term, construction-related air pollutant emissions as those described under Alternatives A through D, and the air quality effects would be similarly insignificant. As described under Alternatives A through D, with improved circulation resulting from traffic mitigation, LOS would be improved, thereby reducing idling time and associated vehicle emissions. The long-term effects of off-site traffic mitigation improvements would therefore be less than significant with incorporation of the BMPs in **Section 2.3.2**.

Biological Resources

Intersections 18, 19, 20, and 21 (North Street / Oak Street, North Street / I-5 SB Off-Ramp, North Street / McMurray Drive and I-5 NB Off-Ramp, and Balls Ferry Road / Oak Street) are currently paved and developed with ruderal/developed shoulders and/or roadsides on one or both sides of the road. Ruderal/developed areas contain sparse vegetation consisting predominately of non-native grass species, and the areas are heavily disturbed by vehicle traffic. The areas of impact provide very limited habitat to wildlife and are not considered critical or sensitive. Rocked and paved manmade drainages are located along the SB off-ramp and NB on-ramp of I-5. Drainages collect water runoff during storm events to reduce roadway flooding. Should drainages be impacted during construction of proposed intersection improvements, appropriate consultation with the USACE would occur to determine if the drainages qualify as a Water of the U.S. Construction of traffic mitigation improvements (as detailed in **Section 5.8.2**) at Intersections 18 and 21 would not significantly impact wildlife habitat, critical habitat, special-status species, or migratory birds. Impacts to potential Waters of the U.S. would be reduced to less-than-significant levels with implementation of mitigation measures identified in **Section 5.2** and **Section 5.5.3**, which include permitting and preparation of a SWPPP.

Cultural Resources

No cultural resources were identified within Alternative E traffic mitigation areas. As described in **Section 3.6**, efforts to document cultural resources included previous background research conducted by the NEIC on September 29, 2016, for a review of previously identified archaeological sites and surveys within a 0.5-mile radius of the Anderson Site APE. There is a possibility that previously unknown cultural and/or paleontological resources will be encountered during ground disturbing activities. This would be a potentially significant impact. Mitigation measures are presented in **Section 5.6** for the treatment of unanticipated discoveries. Implementation of avoidance and mitigation measures listed in **Section 5.6** would ensure that effects to cultural and/or paleontological resources would not occur and thus not be significant as a result of off-site traffic mitigation improvements.

Socioeconomic Conditions

Socioeconomic conditions would be similar to those described under Alternatives A through D. Impacts would be less than significant.

Transportation/Circulation

Impacts to traffic circulation would be similar to those described under Alternatives A through D. Beneficial impacts would occur.

Land Use

Construction of off-site traffic mitigation improvements would not result in adverse land use effects. The intersection and roadway improvements would be in accordance with the County General Plan and the City of Anderson General Plan. The traffic improvements would not result in changes in land use inconsistent with the General Plans or other guiding documents. It is anticipated that traffic improvements can be constructed within existing and available ROWs. Therefore, there would be no significant indirect effects to land use as a result of off-site traffic mitigation under Alternatives E.

Public Services

Effects to utilities, police, fire, and emergency medical services are similar to those described under Alternatives A through D. With mitigation specified in **Sections 5.8.1** and **5.10.4**, impacts would be less than significant.

Noise

Construction of road improvements would be in the vicinity of existing roadways and would result in minimal noise impacts. Any impacts that may occur would be reduced through Caltrans, County, and/or local regulations, including the imposition of construction hours and the use of noise abatement equipment, included as BMPs under **Section 2.3.2**. Accordingly, with the incorporation of the same noise

BMPs used for direct project-related noise impacts, no significant indirect noise impacts would occur as a result of off-site traffic mitigation under Alternative E.

Hazardous Materials

Hazardous materials effects are similar to those described under Alternatives A through D. With the incorporation of BMPs specified in **Section 2.3.2**, impacts would be less than significant.

Aesthetics

Aesthetic impacts as a result of Alternatives E would be similar to those under Alternatives A through D. Impacts would be less than significant.

Alternative F – Environmental Consequences

Under the Expansion of Existing Casino Alternative, Alternative F would not require any off-site traffic mitigation improvements, as described above. No effect would occur under this alternative.

Alternative G – No Action Alternative

Under the No Action Alternative, Alternatives A through F would not be implemented, and therefore no off-site traffic mitigation improvements would take place. No effect would occur under this alternative.

4.14.2 INDIRECT EFFECTS FROM UTILITY/INFRASTRUCTURE CONNECTIONS

Improvements

Alternatives A through D (Strawberry Fields Site)

As described in **Section 2.0** and shown in **Figure 4.14-2**, Alternatives A, B, C, and D would require off-site utility connections under Water Supply Option 1 (off-site water supply) and Wastewater Option 1 (off-site wastewater treatment and disposal). These optional utility projects involve tying the Strawberry Fields Site (including Alternatives A through D) into the City's water and wastewater systems with new pipeline connections.

Under Water Supply Option 1, water supply to serve the Proposed Project would be provided through a connection to the City's municipal water supply infrastructure. Connection to the City's water system would require construction of approximately 777 linear feet of water pipelines from the site to an existing 24-inch water main at the intersection of Bechelli Lane and the driveway leading west to 5170 Bechelli Lane. Wastewater treatment would be provided by the City via connection to the City's conveyance system and wastewater treatment plant (WWTP). Connection to the existing treatment system would require the installation of a lift station on the Strawberry Fields Site, and 702 linear feet of sewer force main pipelines between the new lift station located northwest of the casino and the existing Sunnyhill Lift Station, located at 5100 Bechelli Lane, currently operated by the City.



SOURCE: City of Redding 2016 SRTA Imagery, 3/2016; Coleman Engineering Feasibility Study, 7/14/17; AES, 8/14/2017

— Redding Rancheria Fee-to-Trust EIS / 214584 ■

Figure 4.14-2
Option 1 Off-site Water Supply and
Wastewater Treatment and Disposal Improvements

Additionally, Alternatives A through D would require utility service connections with Redding Electric Utility (REU) for electricity and Pacific Gas and Electric Company (PG&E) for natural gas service. The electrical connection would be made with existing overhead REU electrical lines that run along the northern boundary of the Strawberry Fields Site. This connection may require upgraded/expanded overhead wires between the Strawberry Fields Site and the REU electrical lines along the northern boundary. Off-site electrical improvements are conceptual at this time and design and construction plans would be prepared after an alternative has been selected for development. PG&E would extend natural gas service to the Strawberry Fields Site. A PG&E main natural gas line exists approximately 1,100 feet north of the Strawberry Fields Site at the southern edge of the Hilton Garden Inn parking lot (Perez, 2017). PG&E would likely connect Alternative A to the main line via open trenching with four inch plastic piping, the same size and material of the existing mainline (Perez, 2017). As discussed in more detail below, utility line extensions are not anticipated to result in adverse environmental effects.

Alternative E (Anderson Site)

Alternative E would require underground utility service connections with PG&E for electricity and natural gas. Off-site electrical/gas utility connections are conceptual at this time and design and construction plans would be prepared after an alternative has been selected for development. However, the electrical connection would be made with the existing PG&E electric junction box approximately 300 feet north of the Anderson Site along the southern boundary of the Camping World Redding property (Perez, 2017). The junction box has the capacity for a three-phase power connection, which is typically suitable for large commercial development (Perez, 2017). Similarly, the nearest PG&E natural gas mainline pipeline is also 300 feet north of the Anderson Site, along the southern boundary of the Camping World Redding property (Perez, 2017). PG&E has indicated that it may be possible to jointly open-trench electrical and natural gas connection lines from the Anderson Site to the junction box and natural gas mainline pipeline (Perez, 2017) north of the property. Because water and sewer lines already extend through the Anderson Site, off-site water and wastewater utility improvements would not be required under this alternative.

Alternative F (Win-River Casino Site)

No off-site utility improvements are necessary under Alternative F.

Alternatives A through D – Environmental Consequences

Geology and Soils

The construction of pipeline connections and underground electricity transmission upgrades would require grading, excavation, trenching, laying of pipe, and the placement of backfill material to construct the connection to existing water, wastewater, electricity, and natural gas utilities. Potential impacts include soil erosion. With standard construction practices and specifications required by the City as well as mitigation measures provided in **Section 5.2**, there would be no significant indirect effects to geology and soils as a result of utility and infrastructure improvements under Alternative A, B, C, or D.

Water Resources

The development of utility improvements could affect water resources due to grading and construction activities. As discussed in **Section 4.14.1**, construction disturbing more than 1 acre of land would be required to comply with the NPDES General Construction Permit Program, including development of a SWPPP. Construction on City property (including land within the boundaries of the City WWTP and within City streets) would also be required to comply with the City standards for construction. Effects to runoff volumes resulting from the increase in impervious surfaces would be minimal due to the limited extent of above ground improvements. With compliance with the soil erosion and sediment control practices identified in the SWPPP, effects to water resources would be less than significant. The BMPs provided in **Sections 5.2** would further reduce the potential for stormwater runoff to impact water quality.

Air Quality

Construction of water/wastewater pipelines and electrical upgrades would be of a limited duration and not constitute a magnitude of earthwork that would create significant air quality effects. Construction generated dust and emissions would be controlled by standard BMPs. Construction emissions would be negligible given the small area of disturbance and temporary nature of construction activities; by following BMPs included in **Section 2.3.2**, emissions would not exceed applicable emission levels (40 CFR 93.153 [b][1] and [2]).

Biological Resources

The construction of pipeline connections and underground electricity transmission upgrades would require grading, excavation, trenching, laying of pipe, and the placement of backfill material to construct the connection to existing water, wastewater, electricity, and natural gas utilities. All utilities would be installed underground, and construction areas would be restored to pre-project conditions, thus there would be no permanent habitat conversion and potential impacts to biological resources would be limited to disturbance from short term construction. The proposed utility improvements would extend through non-native annual grasslands, dominated by ruderal species. Although habitats within the proposed pipeline areas may be suitable for several federal and State special-status species with the potential to occur in nonnative annual grassland habitat, they are not, in and of themselves, listed as critical or sensitive under federal designation. Designated critical habitat does not occur within the area of impact.

Additionally, proposed pipelines would cross under a man-made water transport canal that carries water from the Sacramento River intersects the northern portion of the North Access Improvement Area. The canal is controlled by the Anderson-Cottonwood Irrigation District (ACID) under a pre-1914 water right. Manmade features are generally not considered Waters of the U.S. unless built in place of a historic natural water-carrying drainage or feature. The canal was built from surrounding uplands and was not historically part of a natural jurisdictional feature. Thus, the canal is considered non-jurisdictional by the USACE (Roberts, 2017), and consultation with ACID would occur prior to pipeline construction. Potential impacts to wildlife habitat and wetlands and Waters of the U.S. would be less than significant.

Potential impacts to special-status species and migratory birds would be avoided or minimized to less-than-significant levels with implementation of the mitigation measures identified in **Section 5.5**.

Cultural Resources

No prehistoric or historic period cultural or paleontological resources are known to occur within the vicinity of the utility infrastructure improvements based upon a field survey and a record search conducted at the NEIC (refer to **Section 3.6**). Therefore, no significant impacts to known cultural resources would occur as a result of off-site water/wastewater improvements and utility connections. By following the mitigation measures included in **Section 5.6** in the event of accidental discovery, effects to cultural and paleontological resources would be less than significant.

Socioeconomic Conditions

Effects would be similar to those described in **Section 4.14.1**. Utility improvements could result in short-term disturbances to traffic flow and minor delays due to constricted traffic movement. Nearby businesses and residences would remain accessible throughout construction. The area of roadway and utility impacts would be of a limited size and would not create negative socioeconomic effects. The improvements would not result in long-term disruption of access to surrounding land uses or to minority or low-income populations. The Tribe would be responsible for pro rata share payments to fund the proposed improvements. Therefore, no significant indirect effects to socioeconomic conditions would occur as a result of off-site traffic mitigation and utility improvements.

Transportation/Circulation

Water, wastewater, electricity, and natural gas improvements within road ROWs would be limited in scale and duration, resulting only in short-term disturbances to traffic flows. Consultation with the appropriate agencies, along with the temporary nature of construction, in addition to construction mitigation measures provided in **Section 5.8.1**, would ensure there would be no indirect effects to the transportation and circulation network as a result of utility improvements under Alternatives A, B, C, and D.

Land Use

The construction of proposed utility improvements would not result in adverse land use effects as connections would be located underground, or would modify pre-existing aboveground utilities, and all surfaces would be restored to existing conditions after construction is completed. There would be no indirect effects to land use as a result of off-site utility improvements under Alternative A, B, C, or D.

Public Services

Construction of the off-site utility and infrastructure connections under Alternatives A through D may result in a temporary break in service. However, because these effects are common when upgrading and maintaining utility services, and because potential service breaks would be temporary, these effects are

considered less than significant. As described in **Section 4.14.1**, these improvements may result in short-term disturbances to law enforcement, fire, and emergency medical services as a result of road closures and access issues during trenching. Implementation of emergency service coordination mitigation measures listed in **Sections 5.8.1** and **5.10.4** would ensure no significant indirect public service impacts would occur as a result of off-site utility mitigation under Alternatives A, B, C, and D.

Noise

Construction of off-site utility and infrastructure improvements would result in minor noise impacts as a result of Alternatives A, B, C, and D. City regulation of construction hours and requirements for installation of noise abatement equipment would minimize such impacts. Therefore, with incorporation of BMPs included in **Section 2.3.2**, no significant indirect noise impacts would occur as a result of off-site utility improvements under Alternatives A, B, C, and D.

Hazardous Materials

As described in **Section 4.14.1**, construction of the utility infrastructure improvements could potentially result in hazardous materials effects. However, the potential hazards described in **Section 4.14.1** are common to construction activities, would be minimized with adherence to City, state and federal statutes, standard operating procedures, and BMPs, such as refueling in designated areas, storing hazardous materials in approved containers, clearing of dried vegetation, and properly initiating of response and clean-up measures as well as the BMPs provided in **Section 2.3.2**. Potential indirect hazardous materials impacts from the construction of utility infrastructure improvements are therefore less than significant.

Aesthetics

Because the proposed utility improvements would either be constructed within a trench that would be backfilled after construction or involve the upgrade of existing above-ground utilities, impacts to aesthetics and community character would be temporary and insignificant. Therefore, significant indirect effects to aesthetics would not occur as a result of Alternatives A, B, C, and D.

Alternative E – Environmental Consequences

Under Alternative E, impacts would be the same as those described for Alternatives A through D, with the exception that no pipeline extension impacts would occur. With incorporation of mitigation included in **Section 5.0** and BMPs included in **Section 2.3.2**, indirect effects from the extension of natural gas and electrical service to the Anderson Site would be less than significant.

Alternative F – Environmental Consequences

Under the Expansion of Existing Casino Alternative, Alternative F would not require any off-site utility improvements, as described above. No effect would occur under this alternative.

Alternative G – No Action Alternative

Under the no action alternative, Alternatives A through F would not be implemented, and therefore no off-site utility improvements would take place. No effects would occur under this alternative.

4.14.3 GROWTH-INDUCING EFFECTS

NEPA requires that an EIS analyze “growth inducing effects” (40 CFR §1502.16 [b], 40 CFR §1508.8 [b]). A growth-inducing effect is defined as one that fosters economic or population growth, or the construction of additional housing. Growth inducement could result if a project established substantial new permanent employment opportunities (e.g., new commercial, industrial, or governmental enterprises) or if it would remove obstacles to population growth (e.g., expansion of a WWTP that could allow more construction in the service area). Direct growth inducement is possible if a project contains a component that by definition would lead to “growth,” such as new residential development. None of the project alternatives includes direct growth inducement. This section assesses the potential for indirect growth inducement for each development alternative.

Alternative A – Proposed Project

Development of Alternative A would result in employment opportunities arising from direct as well as indirect and induced effects. Construction-related employment opportunities would be temporary in nature, and would not result in the permanent relocation of employees to the City or County.

As discussed in **Section 4.7.1**, Alternative A would create 921 net new employment positions in County, including direct and indirect/induced opportunities. Of these new jobs, a majority of positions would be filled with people already residing within the region and would, therefore, not require new housing. As discussed in **Section 3.7.1**, there were approximately 8,415 vacant housing units in the County housing market in 2015. Based on the analysis presented in **Section 4.7** and within **Appendix A**, it is anticipated that approximately 75 new employees would relocate their place of residence to the County under Alternative A. As such, there are estimated to be more than enough vacant homes to support potential impacts to the regional labor market under Alternative A.

The potential for commercial growth resulting from the development of Alternative A would result from fiscal output generated throughout the County. Under Alternative A, this output would be generated from direct, indirect, and induced economic activity. Indirect and induced output could stimulate further commercial growth; however, such demand would be diffused and distributed among a variety of different sectors and businesses in the City and County. As such, significant regional commercial growth inducing impacts would not be anticipated to occur under Alternative A. Development in the City or other cities within the County would be subject to the constraints of their general plans, local ordinances, and other planning policies and documents. New projects resulting from any induced effect would be subject to appropriate project-level environmental analysis. As discussed above, the minimal amount of

commercial growth that may be induced by Alternative A would not result in significant adverse environmental growth-inducing effects.

Alternative B – Proposed Project with No Retail Alternative

The effect on housing and potential commercial growth under Alternative B would be comparable but to a lesser degree than Alternative A, since Alternative B does not include a regional retail component. No significant impacts to the housing market are anticipated to occur, nor is significant regional commercial growth anticipated to occur under Alternative B.

Development in the City or other cities within the County would be subject to the constraints of their general plans, local ordinances, and other planning policies and documents. New projects resulting from any induced effect would be subject to appropriate project-level environmental analysis. As discussed above, the minimal amount of commercial growth that may be induced by Alternative B would not result in significant adverse environmental effects.

Alternative C – Reduced Intensity Alternative

The effect on housing and potential commercial growth under Alternative C would be comparable but to a lesser degree than Alternative A, since Alternative C is reduced in size and scope. As such, no significant impacts to the housing market are anticipated to occur, nor is significant regional commercial growth anticipated to occur under Alternative C.

Development in the City or other cities within the County would be subject to the constraints of their general plans, local ordinances, and other planning policies and documents. New projects resulting from any induced effect would be subject to appropriate project-level environmental analysis. As discussed above, the minimal amount of commercial growth that may be induced by Alternative C would not result in significant adverse environmental effects.

Alternative D – Non-Gaming Alternative

The effect on housing and potential commercial growth under Alternative D would be comparable to a lesser degree than Alternative A, since Alternative D is reduced in size and scope. As such, no significant impacts to the housing market are anticipated to occur, nor is significant regional commercial growth anticipated to occur under Alternative D. As Alternative D involves the continuing operation of the existing Win-River Casino, there is no potential to induce on-Reservation growth due to land constraints, little on-Reservation growth of any kind is anticipated under Alternative D.

Development in the City or other cities within the County would be subject to the constraints of their general plans, local ordinances, and other planning policies and documents. New projects resulting from any induced effect would be subject to appropriate project-level environmental analysis. As discussed

above, the minimal amount of commercial growth that may be induced by Alternative D would not result in significant adverse environmental effects.

Alternative E – Anderson Site Alternative

Development of Alternative E on the Anderson Site would generate new employment opportunities that could result in additional housing and commercial demand. **Section 4.7.6** determined that the employment impact of Alternative E would result in approximately 780 employment opportunities, including direct and indirect/induced opportunities. Similar to Alternative A, a majority of positions are anticipated to be filled with people already residing within the region and would, therefore, not require new housing. The effect on housing and potential commercial growth would be similar to Alternative A due to the similar size and scope of development. Similar to Alternative A, based on regional housing stock projections and current trends in local housing market data, there are anticipated to be more than enough available homes to support new employees under Alternative E. As such, Alternative E is not expected to stimulate regional housing development and a significant adverse induced impact to the housing market would not occur.

Development within the County would be subject to the constraints of their general plans, local ordinances, and other planning policies and documents. New projects resulting from any induced effect would be subject to appropriate project-level environmental analysis. As discussed above, the minimal impact to the County as a result of potential growth inducement from Alternative E would be less than significant.

Alternative F – Expansion of Existing Casino Alternative

The effect on housing and potential commercial growth under Alternative F would be much less than that under Alternative A due to the reduction in number of new employees and low potential for employee relocation (refer to **Section 4.7.7**). Development on-Reservation is guided by tribal documents and policies. As Alternative F involves the continued operation of the existing Win-River Casino, there is no potential to induce on-Reservation growth, due to land constraints.

Alternative G – No Action Alternative

Under the No Action Alternative, neither the Strawberry Fields nor Anderson Sites would be taken into trust. No development would occur in the near future on either site and no expansion would occur on the Win-River Casino Site. No significant growth-inducing effects would result from this alternative.

4.15 CUMULATIVE EFFECTS

4.15.1 INTRODUCTION

Cumulative effects are defined as those effects to the environment resulting from the incremental effect of the Proposed Action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 Code of Federal Regulations [CFR] 1508.7). Cumulative effects analysis broadens the scope of analysis to include effects beyond those solely attributable to the direct effects of the alternatives. The purpose of cumulative effects analysis, as stated by the Council on Environmental Quality (CEQ), “is to ensure that federal decisions consider the full range of consequences” (CEQ, 1997). For a discussion of the growth-inducing effects of the proposed alternatives, please refer to **Section 4.14**.

The process of analyzing cumulative effects, or impacts, requires consideration of issues in each of the traditional components of the Environmental Impact Statement (EIS), including scoping, describing the affected environment, and determining environmental consequences. The incorporation of cumulative effects analysis also aids in the development of alternatives and appropriate mitigation measures.

The analysis in this section considers the incremental effects of the project alternatives on specific resources, ecosystems, and human communities that could occur in conjunction with other reasonably foreseeable actions, projects, and trends. As recommended by CEQ’s *Considering Cumulative Effects*, only those potential cumulative effects that are considered to be relevant or consequential have been discussed in depth (CEQ, 1997).

The geographic boundaries of the cumulative effects zone have been determined based on the nature of the resources affected and the distance that such effects may travel. As an example, increased sedimentation of waterways that result from a project is limited to the watershed in which they occur. As a result, it is only necessary to examine effects within that watershed. Air quality emissions from a project travel over far greater distances and, therefore, necessitate analysis on a County, air basin, or regional level. For this analysis, the geographic boundary of the cumulative effects zone is generally that of Shasta County (County), although with many resources (water, biological etc.) smaller natural or cultural boundaries are used. The temporal frame of analysis for cumulative effects must also be determined to evaluate impacts. The year 2040 was chosen as the cumulative year for analysis based on the long-term development forecast used in the Shasta County Regional Travel Demand Model maintained by the Shasta Regional Transportation Agency and on the 2040 Plus Project Conditions of the 2017 *River Crossing Marketplace Specific Plan Traffic Impact Analysis Report*.

4.15.2 CUMULATIVE SETTING

The cumulative setting includes past, present, and reasonably foreseeable future actions not part of the Proposed Action, but related to cumulative effects. This includes projected growth and zoning as detailed in the County and the City of Redding (City) General Plans, as well as reasonably foreseeable development projects. The cumulative impact analysis within this EIS and associated technical studies (including the Traffic Impact Study [TIS] provided as **Appendix F**), considers the potential cumulative actions and projects in the vicinity and additional growth in accordance with the County and City General Plans.

The status of affected resources is based upon the information provided in **Section 3.0** of this document, from specific resource studies that have been undertaken for the project alternatives, and additional review and analysis. Cumulative effects analysis is based on the assumed enforcement of federal, State, and local regulations, including the implementation of the policies outlined in the County and City General Plans. Cumulative impacts for each environmental issue area are discussed below for Alternatives A through F.

Shasta County and City of Redding Growth from General Plan Buildout

The City General Plan anticipates an annual population growth rate is 0.55 percent, with population expected to increase from 81,198 residents in 2000 to 93,190 residents by 2019; extrapolating this growth rate would result in a population of approximately 104,600 in 2040 (City of Redding, 2000). The City of Anderson General Plan anticipates that population will grow from 12,000 in 2007 to 19,575 by the year 2025; extrapolating this growth rate would result in a population of 33,000 by 2040 (City of Anderson, 2007). Additionally, the County General Plan estimates that population in the County will increase from 165,200 residents in 2000 to 246,500 residents by 2025; extrapolating this growth rate would result in a population of approximately 331,000 by 2040 (Shasta County, 2004).

Potentially Cumulative Actions and Projects

Major development projects proposed and/or currently being constructed in the vicinity of the Strawberry Fields Site, Anderson Site, and Win-River Casino Site are listed below and are incorporated under cumulative conditions. These projects were determined based on consultation with local government agencies, including the City of Anderson, the City of Redding, and the County, as well as the TIS in **Appendix F**.

Transportation Projects – All Alternative Sites

A number of transportation projects are planned within the traffic study area, and are listed below (**Appendix F**). It should be noted that this cumulative projects area incorporates the vicinities of all three alternative site locations analyzed in this EIS (e.g., Strawberry Fields Site, Anderson Site, and Win-River Casino Site). As identified in the Transportation Concept Reports and regional plans, these

improvements are expected to be operational by the cumulative year and will increase overall capacity and improve circulation (**Appendix F**):

- The **bridge over Oak Run Creek on Old 44 Drive** is proposed to be replaced with a new single-span 85-foot-long, 32.33-foot-wide reinforced concrete box girder bridge (OPR, 2017a).
- **Churn Creek Road** is proposed to be extended north of Highway 299 to Oasis Road (City of Redding, 2016i).
- The **Redding to Anderson 6-Lane Project** proposes to add a third lane and paved shoulder on southbound (SB) and northbound (NB) Interstate 5 (I-5) between the City of Anderson and the City of Redding (Caltrans, 2013b).
- The **ITS Gaps** project will add traffic communication equipment to an existing communication system at three locations along State Route 273 (SR-273) near the cities of Redding and Anderson (OPR, 2017b).
- The **SR-273 Gaps** project will repave the highway, add curb ramps where needed, repair culverts, and bring guardrails up to current standards along SR-273 between Anderson and Redding (OPR, 2017b).

Development Projects

A partial list of projected development projects through the year 2040 is presented in **Table 4.15-1** and the locations of these projects in relation to the alternatives sites are shown on **Figure 4.15-1**.

TABLE 4.15-1
CUMULATIVE DEVELOPMENT IN THE CITY OF REDDING, CITY OF ANDERSON, AND SHASTA COUNTY

Project Name	Type	Description	Site Acres	Location	Distance to Strawberry Fields Site (miles)	Distance to Anderson Site (miles)	Distance to Win-River Casino Site (miles)
River Crossing Marketplace (Costco)	Commercial	New Costco warehouse, fuel facility, and retail shopping center	25.14	S. Bonnyview Road between Bechelli Lane and I-5	0.3	6.1	2.6
Churn Creek Market Place	Commercial	Grocery store anchored shopping center	18.8	4601 Churn Creek Road	0.4	6.0	2.7
Waverly Manor Subdivision	Residential	Divide 14.5 acres into 38 lots for single family homes	14.5	6481 Eastside Road & 2685 Sacramento Drive	1.0	5.7	1.0
Riverway Villas Subdivision	Residential	Subdivide into 11 lots for development of 36 multi-family units	4.16	2375 Star Drive	1.1	5.9	1.0

4.0 Environmental Consequences

Project Name	Type	Description	Site Acres	Location	Distance to Strawberry Fields Site (miles)	Distance to Anderson Site (miles)	Distance to Win-River Casino Site (miles)
Stonecreek Subdivision	Residential	Residential subdivision	53	South of Rancho Road, one mile east of Churn Creek Rd	1.7	5.0	3.8
Lowden Redding Partners	Residential / Commercial	Mixed-use development	6.4	2953 & 3011 Lowden Lane, 2956 Bechelli Lane, 415 Hartnell Avenue, Redding	2.2	8.2	4.0
Henderson Parkview Open Space Restoration	Recreation / Public	Trail and kayak access project	40	South of Cypress Bridge, on both sides of the Sacramento River	2.7	8.3	4.0
The Terrace Subdivision	Residential	9 lot single family subdivision	6.9	North of Tarmac Road, west of Shasta View Drive	3.2	8.1	5.6
Aramark Uniform and Career Apparel	Commercial	Regional industrial Laundry depot	1.75	755 Butte Street, Redding	3.9	9.5	5.4
Riverpark Gardens Subdivision	Residential	24 attached unit housing project	2.1	Along Rupert Road, Anderson near Julie Lane, Anderson	5.3	0.9	5.8
Diamond Street Subdivision	Residential	45 unit affordable housing project	2.3	1385 Diamond Street, Anderson	5.6	0.7	5.3
Salt Creek Heights	Residential	Develop 440 residential units with a park and open space	272.9	Between Highway 299, Salt Creek, and Buenaventura Blvd.	5.6	11.9	5.8
Bethel Church	Public	New church campus	39.3	2080 Collyer Drive, Redding	6.0	11.2	8.2
Prestige Storage	Industrial	Expand Prestige Storage onto an additional 4 acre site	4.0	1110 Prestige Way and 741 Redwood Way, Redding	6.2	11.7	7.8
Home2 Suites Development	Commercial	Two 4-story hotels, totaling 179 Rooms	3.5	5174 & 5184 Caterpillar Road, Redding	6.5	12	8.3
Anderson Heights Water Reservoir Replacement	Industrial	Replace an existing 1 million gallon concrete water storage reservoir with a new 1.4 million gallon steel tank	N/A ¹	Southeast of the intersection of West Street and South Street, Anderson	6.7	1.3	6.7

Notes: 1 – Acreage not known (Hamilton, 2017).

Source: City of Anderson, 2015b; City of Redding, 2017a; OPR, 2017a; OPR, 2017b; Hamilton, 2017.

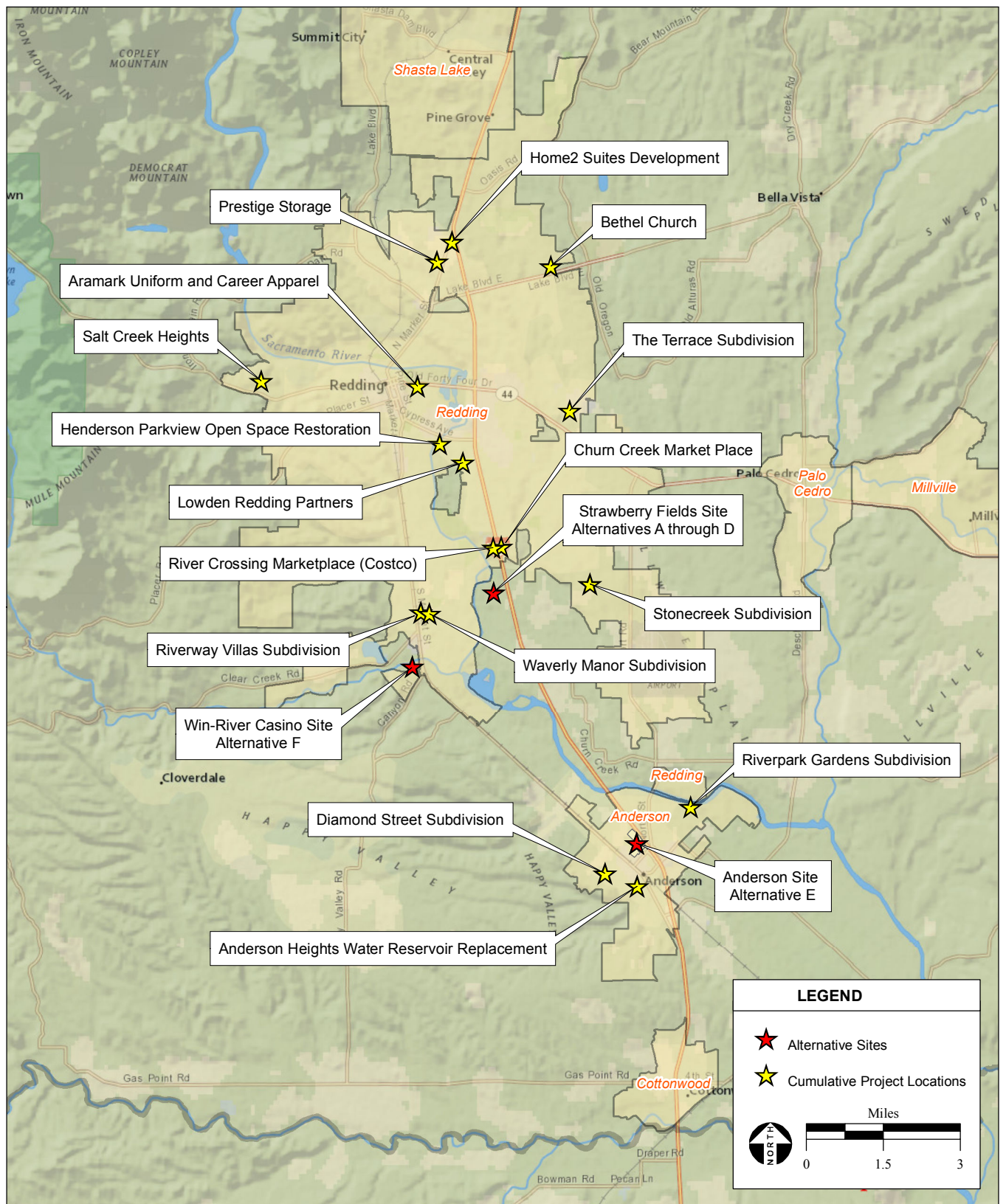


Figure 4.15-1
Cumulative Project Locations

4.15.3 ALTERNATIVE A – PROPOSED PROJECT

The effects of Alternative A in conjunction with the cumulative setting identified above are presented below. Effects are described for each of the subject areas of the environment described in other portions of this EIS.

Geology and Soils

Cumulative effects associated with geology and soil resources are not expected to occur as a result of future developments in combination with Alternative A. Topographic changes may be cumulatively significant if the topography contributes significantly to environmental quality with respect to drainage, habitat, or other values; however, no significant topographic changes would occur as a result of Alternative A.

Soil loss could be cumulatively considerable if the project alone would not result in significant loss of topsoil, but taken together with all other developments may result in significant depletion of available soils. Local permitting requirements for construction would address regional geotechnical and topographic conflicts, seismic hazards, and resource extraction availability. Approved developments, including those listed above, would be required to follow applicable local permitting procedures. In addition, the project and all other developments that disturb one acre or more must comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which requires that Best Management Practices (BMPs) be implemented to address soil erosion, as outlined in **Section 5.2**. Therefore, implementation of Alternative A would not result in significant cumulative effects to geology or soils.

Water Resources

Surface Water and Flooding

Cumulative effects to water resources may occur as the result of buildout of the County and City General Plans, including the cumulative projects listed above in combination with Alternative A. Examples of potential effects include increased sedimentation, increased pollution, and increased stormwater flows. Stormwater discharges from residential and commercial areas are of concern in managing surface water quality. Pollutants that accumulate in the dry summer months, such as oil and grease, asbestos, pesticides, and herbicides, may create water quality problems due to their presence in high concentrations during the first major storm event.

A watershed's runoff characteristics are altered when impervious surfaces replace natural vegetation. Changes in runoff characteristics may increase stream volumes, increase stream velocities, increase peak discharges, shorten the time to peak flows, and lessen groundwater contributions to stream base-flows during non-precipitation periods. Urban areas also have sources of non-point source pollution that can affect regional water quality. Construction and implementation of the proposed development projects

listed above may likewise affect water quality by increasing sedimentation and pollution, and increasing stormwater flows. However, the projects would include erosion control measures in compliance with the NPDES permit program and the United States Environmental Protection Agency (USEPA).

As described in **Section 4.3** and detailed in **Appendix C**, stormwater management infrastructure, including perforated storm drain pipes and a vegetated swale, would be constructed to collect, hold, and treat surface water under Alternative A. The vegetated swale would discharge both runoff from most of the developed portion of the Strawberry Fields Site and, during extreme precipitation events, westerly overland flow from Churn Creek to a proposed wet pond in the southern portion of the Strawberry Fields Site. Stormwater from the western portion of the developed area would be conveyed via a perforated storm drain and drain rock infiltration trench to the Sacramento River. The storm drain system will be oversized by 25 percent to accommodate increase flows under future conditions (**Appendix C**). Other cumulative projects would have similar precautionary features incorporated into their design. Therefore, implementation of Alternative A in combination with other development would not result in significant cumulative effects related to surface water and flooding.

Buildout of the County and City General Plans could result in cumulative effects to water supply if the total water demand of approved projects, including the future developments identified above and Alternative A, exceed the supply capacity of regional surface water resources. As described in **Section 2.3.2**, Alternative A involves two water supply options: off-site (Option 1) and on-site (Option 2). Because Alternative A, Water Supply Option 2 does not involve the use of surface water to meet the potable water demand of the Proposed Project, Water Supply Option 2 would not contribute to any cumulatively significant impact to surface water supply. As discussed in **Section 4.3**, Alternative A, Water Supply Option 1 involves connecting the Strawberry Fields Site to the municipal water supply of the City, which derives approximately 77.8 percent of its total potable water capacity from surface water resources (specifically, the Sacramento River and Whiskeytown Lake). As discussed in **Section 4.3**, there is currently a significant supply surplus within the City potable water supply system, and the demand added to the system by Alternative A, Water Supply Option 1 would be minor relative to both the existing demand and the surplus.

The City anticipates that the demand on the municipal water supply will increase from 19,001 acre-feet per year (AFY) in 2015 to 23,264 AFY in 2020 and to 24,688 AFY in 2035, which extrapolates to 25,196 AFY in 2040 (City of Redding, 2016a). However, given that the City's current potable water supply is approximately 40,040 AFY (City of Redding, 2017d), a significant water supply surplus would continue to exist within the system in 2040, regardless of the addition of 247.9 AFY of potable water demand under Alternative A. Furthermore, the City has negotiated for additional surface water transfers of up to 4,000 AFY from ACID (City of Redding, 2016a), which would increase the City's surface water supply capacity. Therefore, Alternative A would not result in a significant cumulative effect to surface water supply. The BMPs provided in **Section 2.3.2** would further reduce this impact.

Water Quality

Concurrent construction of Alternative A and other cumulative projects identified above could result in cumulative effects to water quality. Construction activities could result in erosion and sediment discharge to surface waters, potentially effecting water quality in downstream water bodies. In addition, construction equipment and materials have the potential to leak, thereby discharging oils, greases, and construction supplies into stormwater, potentially affecting both surface water and groundwater. To mitigate potential adverse effects, approved developments would be required to implement erosion control measures and construction BMPs via a site-specific Stormwater Pollution Prevention Plan (SWPPP) in compliance with the State of California General Permit for Discharges of Storm Water Associated with Construction Activity, or compliance with USEPA stormwater regulations. With the implementation of measures identified in **Section 5.2**, Alternative A would not result in adverse cumulative effects to water quality.

Groundwater Supply

Buildout of the County and City General Plans could result in cumulative effects to groundwater if the total water demand of approved projects, including the future developments identified above and Alternative A, exceed the recharge capacity of the groundwater basin. As described in **Section 4.3**, both of Alternative A's water supply options involve the use of groundwater: under Water Supply Option 1, the Strawberry Fields Site would be connected to the City's municipal water supply, which derives approximately 22.2 percent of its total capacity from groundwater resources (City of Redding, 2017e); under Water Supply Option 2, a groundwater well would be drilled on site and would supply 100 percent of the Proposed Project's potable water demand.

As discussed in **Section 3.3** and **Appendix B**, the Redding Groundwater Basin, which both underlies the Strawberry Fields Site and is the aquifer from which all of the City's municipal wells extract water, is not currently in a state of overdraft (**Appendix B**). Due to the lack of overdraft, the historical drought resiliency of the basin, and the comparatively small amount of water that would be extracted under Alternative A relative to the total existing demand on the basin, both water supply options were determined to have a less-than-significant impact on groundwater resources in **Section 4.3**. Future demands on the groundwater basin by cumulative development would be controlled by City and County land use authorities, as well as by the recently passed Senate Bill 1168, which requires local agencies to create groundwater management plans, and Assembly Bill (AB) 1739, which allows the state to intervene if local groups do not adequately manage groundwater resources. Based on the short-term availability of groundwater for existing uses and planned development, and the requirement for future groundwater management activities, coupled with the BMPs specified in **Section 5.2** and **Section 2.3.2**, cumulative impacts to groundwater supply would not be significant. The on-site discharge of treated effluent under Wastewater Option 2 would contribute to groundwater recharge and would further reduce any cumulative impacts on the regional groundwater supply associated with Alternative A.

Groundwater Quality

As described in **Section 2.3.2**, wastewater generated by Alternative A and the buildout of the County and the City's General Plans, including the future developments discussed above, would be treated and disposed of either off-site through connection to the City municipal sewer system (Option 1) or on-site (Option 2). Under Wastewater Option 1 of Alternative A, wastewater treatment would be provided by the City through a connection to the City's WWTP. Wastewater at the City WWTP is treated and discharged to the Sacramento River in accordance with a Regional Water Quality Control Board (RWQCB) NPDES permit. The City would be required to meet the waste discharge requirements (WDRs) enumerated in the NPDES permit; the WDRs would be adjusted as necessary by the RWQCB to ensure that cumulative effects to water quality from future development would not adversely impact the designated beneficial uses of the Sacramento River. Under Alternative A Wastewater Option 2, effluent would be treated at an on-site wastewater treatment plant (WWTP). To meet the USEPA wastewater treatment criteria, the Tribe would use an immersed membrane bioreactor (MBR) system to provide tertiary-treated water for reuse or disposal. Reclaimed water from the on-site WWTP would be utilized for casino toilet flushing and landscape irrigation. Treated effluent not utilized for indoor plumbing or outdoor irrigation uses would be discharged through sub-surface disposal. As described in **Section 4.3**, discharge of treated effluent would not adversely impact groundwater quality due to the high level of treatment. Additionally, percolation through the soils would provide additional filtration of any remaining constituents. No adverse effects to surface water or groundwater quality would occur under either option. Therefore, Alternative A would not result in significant adverse cumulative effects to groundwater quality.

Air Quality

Operational Emissions

Operation of Alternative A would result in the generation of mobile emissions from patron, employee, and delivery vehicles, as well as stationary source emissions from combustion of natural gas in boilers and other equipment. Emissions were estimated using California Emissions Estimator Model (CalEEMod) air quality modeling program. Emission estimates for Alternative A in the cumulative year 2040 are provided in **Table 4.15-2**. CalEEMod output files are included in **Appendix I**. Increased gas mileage and improved fleet emission controls of trucks and vehicles in the future are accounted for in CalEEMod. The increase in future gas mileage is attributed to improved fuel efficiency technology and stricter federal and state regulations.

Past, present and future development projects contribute to a region's air quality conditions on a cumulative basis; therefore by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of the National Ambient Air Quality Standards (NAAQS). If a project's individual emissions contribute toward exceedance of the NAAQS, then the project's cumulative impact on air quality would be significant. In developing attainment designations for criteria pollutants, the USEPA considers the relevant region's past, present, and future emission levels. As stated in **Section 3.4**, the USEPA has designated the County as attainment for all

NAAQS. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. However, BMPs provided in **Section 2.3.2** would further reduce project-related emissions. Alternative A would not cumulatively adversely impact the region's air quality.

TABLE 4.15-2
ALTERNATIVE A UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.24	0.00	0.06	0.00	0.00	0.00
Energy	0.03	0.31	0.26	0.00	0.02	0.02
Mobile	3.36	33.35	30.17	0.15	9.29	2.56
Stationary	0.08	0.35	0.74	0.00	0.06	0.06
Total Emissions	5.71	34.01	31.23	0.15	9.37	2.64
<i>De Minimis Levels</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4) Source: CalEEMod, 2016; AES, 2018.						

Carbon Monoxide Hot Spots Analysis

Carbon Monoxide (CO) Hot Spots Analysis is conducted on intersections that after mitigation would have a level of service (LOS) of D, E, or F (Caltrans, 2014). After the implementation of recommended mitigation for the project alternatives, there are intersections which would have an LOS or an increase in delay in the cumulative year 2040 that would warrant a CO Hot Spots Analysis (refer to **Appendix F**). Therefore, a quantitative CO screening analysis is required. CO concentration levels are significant when the NAAQS are violated for the 1-hour and 8-hour standards (Caltrans, 2014). **Section 4.4.1** describes the methodology used to quantify and analyze CO hot spots.

A CO Hot Spots Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Under 2040 cumulative conditions, implementation of Alternative A, after mitigation, would result in the intersection of South Bonnyview Road and the I-5 NB Ramps operating at an LOS D during Friday peak hours. **Table 4.15-3** summarizes the results of the CO Hot Spots Analysis; CO Hot Spots Analysis calculations are shown in **Appendix I**.

As shown in **Table 4.15-3**, CO concentrations at the intersection of South Bonnyview Road and I-5 NB Ramps do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

TABLE 4.15-3
SUMMARY OF LOCALIZED CUMULATIVE CO ANALYSIS (1 AND 8-HOUR) – ALTERNATIVE A

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.49	3.15	2.21
25 Feet	3.05	2.85	1.91
50 Feet	2.90	2.75	1.80
100 Feet	2.76	2.65	1.70
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Source: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

Climate Change

Methodology

Climate change is a global issue that is not being caused by any single development project, but by global cumulative increases in atmospheric greenhouse gas (GHG) concentrations. Thus, global warming is most effectively addressed on a global or regional level. California's global warming policies and legislation (most notably Executive Order [EO] S-3-05 and AB 32) are intended to be regional approaches to ensure that statewide emissions are reduced substantially in the future (to levels much lower than existing levels).

No project-specific quantitative limits have been established by the County, CARB, USEPA, or any other state or federal agency for climate change or GHG emissions. While there is no federal guidance memo related to the consideration of climate change impacts in NEPA documents (the former 2016 CEQ guidance memorandum was withdrawn with issuance of Executive Order (EO) 13783), this EIS includes a quantification of GHG emissions resulting from the project alternatives (in carbon dioxide equivalents [CO₂e]) and discussion of reduction measures to address comments received during scoping and from cooperating agencies.

In addition to quantification of GHG emissions and recommended reduction measures, this EIS considers the impacts of the project alternatives in relation to the GHG reduction targets established by the state of California. The CARB and the Climate Action Team (CAT) have identified approximately 126 strategies and measures that may be utilized by the state to meet its emissions reduction targets in 2010, 2020, and 2050. Most of these measures focus on statewide action meant to curb emissions by changes in statewide planning or policies rather than changes to individual development projects. However, some of the measures may be directly applicable to specific industries or individual commercial developments. Should a development alternative comply with all directly applicable measures, the alternative would support the State's efforts to significantly reduce its cumulative contribution to global climate change.

Due to the inherent nature of climate change, GHG impacts are considered to be exclusively cumulative impacts. Therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere and conforms to the applicable CARB and CAT measures.

Carbon Dioxide Equivalent (CO₂e)

Carbon dioxide equivalent (CO₂e) is a method by which GHGs other than carbon dioxide (CO₂) are converted to a CO₂-like emission value based on a heat-capturing ratio. As shown in **Table 4.15-4**, CO₂ is used as the base and is given a value of one. Methane (CH₄) has the ability to capture 21 times more heat than CO₂; therefore, CH₄ is given a CO₂e value of 21. Emissions are multiplied by the CO₂e value to achieve one GHG emission value. By providing a common measurement, CO₂e provides a means for presenting the relative overall effectiveness of emission reduction measures for various GHGs in reducing project contributions to global climate change.

TABLE 4.15-4
GREENHOUSE GAS CO₂ EQUIVALENT

Gas	CO ₂ e Value
CO ₂	1
CH ₄	21
N ₂ O	310
Notes: CO ₂ e = Carbon dioxide equivalent Source: USEPA, 2016c.	

Impact Assessment

Climate change is expected to result in global impacts, such as more erratic weather patterns, more frequent droughts, and rising sea levels. Climate change is also expected to cause regional and local impacts, such as a change in agricultural growing seasons, loss of forest species, increased drought periods, and reduced water tables. However, no single weather phenomenon is linked or traceable to emissions from a particular project.

Development of the Proposed Project would result in an increase in GHG emissions related to construction, mobile sources (trips generated by the project), stationary sources (components of the Proposed Project that directly emit GHGs from the combustion of natural gas or diesel in boilers, emergency generators, and heating, ventilation, and air conditioning (HVAC) units, and indirect sources related to electricity (combustion of fuels use to produce electricity), solid waste (solid waste decomposition at the landfill and haul trucks), wastewater processing (decomposition of waste and electric and diesel pumps), and water transport (electricity and diesel pumps).

USEPA- and CARB-approved CalEEMod.2016.3.1 was used to estimate construction, area, energy, mobile, stationary, water and wastewater, and solid waste project-related GHG emissions. Model input

and output files are provided in **Appendix I**. The trip generation rates used to estimate GHG emissions are based on information from the TIS (**Appendix F**). **Table 4.15-5** provides a breakdown of project-related GHG emissions.

TABLE 4.15-5
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE A

Emission Source	GHG Emissions in MT CO ₂ e
Construction	
Construction ¹	1,221.85
Operation	
Area	0.12
Mobile (Vehicle Trips)	20,214.83
Stationary Sources	721.65
Electricity Usage	605.51
Solid Waste	649.75
Water/Wastewater	229.97
<i>Operation Subtotal</i>	<i>22,421.83</i>
Total Project-Related GHG Emissions	23,643.68
Notes: 1 – Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions. Source: CalEEMod, 2016; AES, 2018.	

GHG emissions resulting from the Proposed Project are primarily indirect (either indirect mobile emissions from delivery, patron, and employee vehicles or indirect off-site electricity generation, waste pickup, water and wastewater transport, etc.). The federal government has enacted measures that would reduce GHG emissions from mobile sources, some of which have been accounted for in the air quality model used to estimate mobile emissions. BMPs have been provided in **Section 2.3.2** to reduce project-related GHG emissions. Construction BMPs include reduced idling of heavy equipment, thereby, reducing CO₂ during the construction of the Proposed Project. Operational BMPs would reduce indirect GHG emissions from electricity use, water and wastewater transport, and waste transport through the installation of energy efficient lighting, heating and cooling systems, low-flow appliances, drought resistant landscaping, and recycling receptacles. Operational BMPs would also reduce indirect mobile GHG emissions by requiring adequate ingress and egress to minimize vehicle idling and preferential parking for vanpools and carpools to reduce project-related trips. Therefore, with the implementation of all feasible BMPs provided in **Section 2.3.2**, Alternative A would not result in a significant adverse cumulative impact associated with climate change.

As discussed in **Section 3.4**, in California's adopted Climate Change Scoping Plan, CARB identifies the GHG reduction targets of the state and the types of measures that will be used to reach them. Of the approximately 126 strategies and measures identified in the Scoping Plan that would achieve a statewide reduction in GHG emissions, only three would apply to Alternative A (refer to **Table 4.15-6**). The other

policies do not apply to Alternative A because they either apply to state entities, such as CARB, are planning-level measures, or they apply to particular industries, such as the auto repair industry. As shown in **Table 4.15-6**, Alternative A would comply with California's applicable emission reduction strategies.

TABLE 4.15-6
COMPLIANCE WITH STATE EMISSIONS REDUCTION STRATEGIES

EO S-3-05 / AB 32 Strategy	Project Compliance
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Alternative A would be located on trust lands and thus not subject to CARB restrictions on on-site diesel-fueled commercial vehicle idling. BMPs provided in Section 2.3.2 would make the project consistent with this strategy.
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.	Solid waste services are expected to be provided by Waste Management, which is subject to the state's recycling requirements. The development would not affect County diversion goals as waste from tribal land is classified as out-of-state waste and is not calculated in local waste diversion statistics. Although the diversion stream will not be affected, the waste stream would increase. BMPs are provided in Section 2.3.2 , which would make the project consistent with this strategy.
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.	With incorporation of BMPs provided in Section 2.3.2 , water use would be reduced through to installation of low-flow appliances and utilization of recycled water, and the installation of drought-tolerant landscaping, which would make the project consistent with this strategy.
Notes: EO = Executive Order; AB= Assembly Bill. Source: CARB, 2014.	

The effect of climate change on the Proposed Project is also considered in this EIS. Average temperature in the County could increase, resulting in projected extreme heat days, wildfire risk in forest would increase, and greater chance of extreme weather conditions. The intensity of these effects is uncertain and will depend on future GHG emissions worldwide (CEC, 2012).

No characteristics of Alternative A are unique or especially vulnerable to the impacts from climate change. The effects of increasing temperatures and frequency of extreme heat days or extreme weather conditions will be dampened by the use of on-site HVAC units. The Strawberry Fields Site is located at approximately 452 feet above mean sea level and thus is not susceptible to impacts from sea level rise. The Strawberry Fields Site is located in a primarily urban area, which is adequately served by emergency services and, therefore, is not uniquely sensitive to increased risk from wildfires or extreme weather conditions as a result of climate change.

Biological Resources

Cumulative effects to biological resources would occur if Alternative A, in conjunction with buildout of County and City General Plans, including the projects listed within **Section 4.15.2**, would result in a significant effect to special-status species, contribute to a reduction in the number of a special-status species that would affect the species long term sustainability, cause development that permanently

disturbs a wildlife corridor, results in an effect to sensitive habitat that is of regional significance, or results in a conflict with regional conservation goals.

Wildlife and Habitats

As identified in **Section 3.5** and **4.5**, the Strawberry Fields Site is adjacent to the Sacramento River, which contains designated critical habitat for steelhead (Northern California Distinct Population Segment [DPS]), Chinook salmon (Central Valley Spring-Run and Sacramento River Winter-Run), and Green Sturgeon (southern DPS). The Sacramento River is also designated essential fish habitat (EFH) for Chinook salmon. Designated critical habitat and EFH do not occur within the area of impact for Alternative A, and adjacent critical habitat and EFH will not be impacted. Similarly, potential impacts to critical habitat and EFH from other development projects require avoidance and/or mitigation by the United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and/or National Marine Fisheries Service (NMFS). Thus, impacts to critical habitat and EFH under cumulative conditions are less than significant. Additionally, non-native annual grassland would be directly impacted by Alternative A, and additional non-native annual grassland and small areas of valley foothill riparian and valley oak woodland habitat would be impacted if Option 2 for Water Supply and Wastewater is implemented. Wildlife movement is largely restricted in the surrounding area by development, however the majority of the Strawberry Fields Site will remain as open space. None of the habitats that would be affected by implementation of Alternative A are considered sensitive biological communities; therefore, no significant adverse cumulative effects would occur.

Special-Status Species

As discussed in **Section 3.5**, 13 special-status wildlife species have the potential to occur on the Strawberry Fields Site, and 6 have the potential to occur in the area of impact. Mitigation identified in **Section 5.5.1** and **5.5.2** includes measures that would avoid or minimize impacts to special-status species. Similarly, all other projects in the region are required to comply with the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) by avoiding or minimizing effects to protected species. Therefore, after mitigation, implementation of Alternative A would not contribute to adverse cumulative effects to special-status species.

Migratory Birds

Alternative A would not result in significant cumulative effects to nesting migratory birds. However, disturbance to migratory bird habitats and increases in human activity from other proposed projects in the area could incrementally contribute to past, present, and future effects to migratory birds. The development of other projects considered in the cumulative analysis are required to comply with the Migratory Bird Treaty Act (MBTA), which will reduce the overall impact to migratory birds. Mitigation measures provided in **Section 5.5.2** would minimize significant effects to migratory birds. Therefore, implementation of Alternative A would not result in significant cumulative effects to nesting migratory birds.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative A in combination with cumulative growth could have a potentially significant impact on both migrating and local bird populations. Design features to reduce potentially significant nighttime lighting impacts are identified in **Section 2.3.2**, which would minimize significant effects to migratory bird collisions. Therefore, implementation of Alternative A would not contribute to adverse cumulative effects associated with nighttime lighting.

Wetlands and/or Waters of the U.S.

As discussed in **Section 4.5**, implementation of Alternative A, after mitigation, would not result in adverse effects to Waters of the U.S. Project design ensures that Alternative A would avoid wetlands and waterways within the Strawberry Fields Site to the extent possible. Indirect construction effects to the wetland in the northeastern corner of the site would be avoided by the implementation of project features designed to minimize impacts and provide buffers to wetlands, control stormwater and wastewater discharges, and protect the quality of runoff water through conditions of the NPDES permit. Other cumulative projects would likewise avoid or mitigate for impacts to wetlands and Waters of the U.S. in compliance with Section 404 of the federal Clean Water Act (CWA). Therefore, with the implementation of the mitigation measures in **Section 5.5**, Alternative A would not contribute to adverse cumulative effects to wetlands and Waters of the U.S.

Cultural Resources

As described in **Section 3.6**, archaeological investigations revealed that prehistoric site CA-SHA-4413 could be affected by selection of Alternative A, however CA-SHA-4413 has been recommended not eligible for listing on the National Register of Historic Places (NRHP). Construction of the northern access route into the Strawberry Fields Site (under Alternatives A, B, C, and D) as well as future projects near the intersection of South Bonnyview Road and Bechelli Lane could adversely affect CA-SHA-266, an NRHP-eligible site. Mitigation measures have been developed to resolve adverse effects to CA-SHA-266. As discussed in **Section 4.6**, direct effects to unknown cultural resources associated Alternative A would be reduced to a minimal level with the implementation of mitigation measures specified in **Section 5.6**.

Approved projects would be required to follow federal, state, and local regulations regarding cultural resources and inadvertent discoveries of cultural resources. All other cumulative projects would be required to avoid or mitigate for impacts to cultural resources in compliance with local, State, and federal law. Therefore, with the implementation of the mitigation measures outlined in **Section 5.6**, Alternative A would not result in adverse cumulative effects to cultural resources.

Socioeconomic Conditions

Cumulative socioeconomic effects could occur in the future in the project area as the result of Alternative A that affect the lifestyle and economic wellbeing of residents. Alternative A would introduce new economic activity to the County, which is a beneficial effect to the region. When considered with the buildout of the City and County General Plans, Alternative A may contribute towards cumulative socioeconomic effects including impacts to the local labor market, housing availability, increased costs due to problem gambling, and impacts to local government. These effects would occur as the region's economic and demographic characteristics change, as the population grows, and as specific industries expand or contract. Planning documents will continue to designate land uses for businesses, industry, and housing, as well as plan public services for anticipated growth in the region. Therefore, Alternative A would have a less-than-significant cumulative effect with mitigation on socioeconomic conditions.

Transportation

In the year 2040, Alternative A would result in the addition of vehicle traffic to local intersections. The TIS prepared for Alternative A is provided in **Appendix F**. This section summarizes the results of this study and describes potential adverse effects that would occur to intersections, roadways, or freeway facilities within the study area.

2040 Cumulative Background Traffic Conditions

To assess project-related impacts, baseline traffic conditions were estimated for the year 2040 by using data from the 2017 *River Crossing Marketplace Specific Plan Traffic Impact Analysis Report Year 2040 Plus Project Conditions* volumes for applicable intersections and the Shasta County Regional Travel Demand Model for the remaining intersections (**Appendix F**). Cumulative projects included Churn Creek Marketplace, River Crossing Marketplace (Costco), and the Terraces Subdivision, as described in **Section 4.15.2** and included in **Appendix F** analysis. **Table 4.15-7** displays the projected delay and LOS for study intersections during Friday and Saturday PM peak hour traffic.

TABLE 4.15-7
CUMULATIVE YEAR (2040) INTERSECTION LOS WITHOUT PROJECT

ID	Intersections	Control	LOS Target	Peak Hour	Cumulative Year (2040)	
					Delay (sec)	LOS
1	S Bonnyview Rd / Market St (SR-273)	Signal	D	Fri PM	28.4	C
				Sat PM	18.7	B
2	S Bonnyview Rd / E Bonnyview Rd	Signal	D	Fri PM	24.8	C
				Sat PM	8.3	A
3	S Bonnyview Rd / Bechelli Ln	Signal	D	Fri PM	116.9	F
				Sat PM	89.2	F
4	S Bonnyview Rd / I-5 SB Ramps	Signal	D	Fri PM	46.1	D
				Sat PM	38.1	D
5	S Bonnyview Rd / I-5 NB Ramps	Signal	D	Fri PM	32.3	C

4.0 Environmental Consequences

ID	Intersections	Control	LOS Target	Peak Hour	Cumulative Year (2040)	
					Delay (sec)	LOS
				Sat PM	19.7	B
6	S Bonnyview Rd / Churn Creek Rd	Signal	D	Fri PM	39.4	D
				Sat PM	20.5	C
7	Churn Creek Rd / Alrose Ln	SSSC	C	Fri PM	10.8	B
				Sat PM	1.6	A
8	Churn Creek Rd / Victor Ave	SSSC	C	Fri PM	439.6	F
				Sat PM	31.7	D
9	Churn Creek Rd / Rancho Rd	SSSC	C	Fri PM	72.2	F
				Sat PM	12.8	B
10	Churn Creek Rd / Smith Rd	SSSC	C	Fri PM	10.8	B
				Sat PM	9.5	A
11	Market St (SR-273) / Westwood Ave	Signal	D	Fri PM	13.8	B
				Sat PM	10.3	B
12	Market St (SR-273) / Clear Creek Rd	Signal	D	Fri PM	6.6	A
				Sat PM	5.6	A
13	Market St (SR-273) / Girvan Rd	Signal	D	Fri PM	18.4	B
				Sat PM	14.2	B
14	Market St (SR-273) / Redding Rancheria Rd	Signal	D	Fri PM	10.4	B
				Sat PM	8.5	A
15	Canyon Rd / Redding Rancheria Rd	Signal	D	Fri PM	11.6	B
				Sat PM	10.0	B
16	Market St (SR-273) / Happy Valley Rd	Signal	D	Fri PM	17.6	A
				Sat PM	6.4	A
17	Market St (SR-273) / North St	Signal	D	Fri PM	20.0	B
				Sat PM	13.8	B
18	North St / Oak St	SSSC	D	Fri PM	33.1	D
				Sat PM	16.6	C
19	North St / I-5 SB Off-Ramp	AWSC	D	Fri PM	13.7	B
				Sat PM	9.4	A
20	North St / I-5 NB On-Ramp (McMurray Dr)	AWSC	D	Fri PM	72.3	F
				Sat PM	18.8	C
21	Balls Ferry Rd / Oak St	SSSC	D	Fri PM	19.6	C
				Sat PM	15.0	C
22	Balls Ferry Rd / I-5 SB On-Ramp (Ventura St)	Signal	D	Fri PM	28.3	C
				Sat PM	23.0	D
23	Balls Ferry Rd / I-5 NB Off-Ramp (McMurray Dr)	Signal	D	Fri PM	41.7	D
				Sat PM	42.2	D

Notes: **Bold** and highlighted cells represent unacceptable conditions.
Source: Kimley-Horn, 2018 (**Appendix F**).

The same assumptions were made for the Cumulative Year (2040) Conditions as the Buildout Year (2025) Conditions, as described in **Section 4.8**.

As shown in **Table 4.15-8**, the following study intersections would operate at unacceptable LOS during under cumulative conditions without project-related traffic:

- South Bonnyview Road / Bechelli Lane (Friday and Saturday PM);
- Churn Creek Road / Victor Avenue (Friday PM);
- Churn Creek Road / Rancho Road (Friday PM); and
- North Street / I-5 NB On-Ramp/McMurray Drive (Friday PM).

Tables 4.15-8 and 4.15-9 displays the projected delay and LOS for study roadway segments under cumulative conditions without the project. As shown in the table, all roadway segments would operate at acceptable LOS under cumulative conditions without the project.

Table 4.15-10 summarizes the conditions of the freeway segments in the cumulative year (2040) without the addition of any alternative. As shown in the table, all study freeway segments are projected to operate at acceptable levels of service for cumulative conditions without the Proposed Project.

2040 Cumulative Traffic Conditions with Alternative A

Tables 28 and 29 in **Appendix F** provide intersection LOS in 2040 under Alternative A during weekday and weekend PM peak hours under Site Access Options 1 and 2, respectively. As indicated in Tables 28 and 29, the following study intersections are projected to operate at unacceptable LOS under Alternative A cumulative conditions:

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Alrose Lane (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday and Saturday PM); and
- Churn Creek Road / Rancho Road (both Site Access Options, Friday PM).

TABLE 4.15-8
CUMULATIVE YEAR (2040) ROADWAY SEGMENT LOS WITHOUT PROJECT – TWO-LANE

Roadway Segment Number ¹	Roadway Segment	Peak Hour	Analysis Direction	LOS	PFFS (%)	v/c
Strawberry Fields Site						
2	Bechelli Ln south of Bonnyview Rd	Fri PM	NB	A	91.9	0.06
			SB	A	91.9	0.06
		Sat PM	NB	A	93.3	0.03
			SB	A	93.3	0.04
3	Churn Creek Rd east of Alrose Ln	Fri PM	EB	D	73.9	0.56
			WB	D	71.4	0.50
		Sat PM	EB	C	81.7	0.31
			WB	C	80.8	0.35
4	Smith Rd west of Churn Creek Rd	Fri PM	NB	A	97.8	0.02
			SB	A	97.8	0.03
		Sat PM	NB	A	94.3	0.02
			SB	A	94.3	0.02
Anderson Site						
1	North St west of Oak St	Fri PM	EB	C	82.5	0.28
			WB	C	82.0	0.33
		Sat PM	EB	C	88.2	0.18
			WB	B	88.2	0.18
2	Oak St south of North St	Fri PM	NB	A	98.0	0.02
			SB	A	98.0	0.02
		Sat PM	NB	A	98.4	0.01
			SB	A	98.4	0.01
3	North St east of Oak St	Fri PM	EB	C	80.5	0.36
			WB	C	80.7	0.33
		Sat PM	EB	B	86.6	0.20
			WB	B	86.6	0.22
4	Oak St north of North St	Fri PM	NB	A	97.3	0.05
			SB	A	97.3	0.04
		Sat PM	NB	A	97.6	0.03
			SB	A	97.6	0.05
Win-River Casino Site						
3	Canyon Rd south of Redding Rancheria Rd	Fri PM	NB	B	84.9	0.16
			SB	B	84.5	0.24
		Sat PM	NB	B	86.8	0.15
			SB	B	86.8	0.14
Notes: PFFS = Percent Free-Flow Speed; v/c – Volume to Capacity; NB = northbound; SB = southbound; EB = eastbound; WB = westbound 1 – Refer to Figures 3.8-1, 3.8-2, and 3.8-3. Source: Kimlev-Horn, 2018 (Appendix F).						

TABLE 4.15-9
CUMULATIVE YEAR (2040) ROADWAY SEGMENT LOS WITHOUT PROJECT – MULTILANE

Roadway Segment Number	Roadway Segment	Peak Hour	Analysis Direction	LOS	Density (pc/mi/ln)
Strawberry Fields Site					
1	Bonnyview Rd west of Bechelli Ln	Fri PM	EB	A	2.1
			WB	C	20.8
		Sat PM	EB	B	12.0
			WB	B	14.5
Win-River Casino Site					
1	Market St (SR-273) north of Canyon Rd	Fri PM	NB	A	7.8
			SB	A	9.7
		Sat PM	NB	A	5.4
			SB	A	6.3
2	Market St (SR-273) south of Canyon Rd	Fri PM	NB	A	5.9
			SB	A	6.5
		Sat PM	NB	A	3.7
			SB	A	3.7
Notes: NB = northbound; SB = southbound; EB = eastbound; WB = westbound 1 – Refer to Figures 3.8-1 and 3.8-3 . Source: Kimley-Horn, 2018 (Appendix F).					

TABLE 4.15-10
CUMULATIVE YEAR (2040) FREEWAY SEGMENT LOS WITHOUT PROJECT

I-5					Cumulative Year (2040)	
Direction	Freeway Segment Number	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS
Strawberry Fields Site						
Northbound	1	South of Bonnyview Rd Off-Ramp	Basic	Fri PM	13.6	B
				Sat PM	10.8	A
	2 NB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	18.2	B
				Sat PM	12.3	B
	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	9.9	A
				Sat PM	8.4	A
	4 NB	Bonnyview Rd On-Ramp	Merge	Fri PM	26.2	C
				Sat PM	21.6	C
	5	North of Bonnyview Rd On-Ramp	Basic	Fri PM	15.5	B
				Sat PM	12.1	B
Southbound	5	North of Bonnyview Rd Off-Ramp	Basic	Fri PM	19.7	C
				Sat PM	15.0	B
	2 SB	Bonnyview Rd. Off-Ramp	Diverge	Fri PM	28.7	D
				Sat PM	19.7	B

I-5					Cumulative Year (2040)	
Direction	Freeway Segment Number	Freeway Segment	Type	Peak Hour	Density (pc/mi/ln)	LOS
Southbound	3	Bonnyview Rd Off-Ramp to On-Ramp	Basic	Fri PM	14.2	B
				Sat PM	11.6	B
	4 SB	Bonnyview Rd On-Ramp	Merge	Fri PM	31.5	D
				Sat PM	22.6	C
	1	South of Bonnyview Rd On-Ramp	Basic	Fri PM	20.1	C
				Sat PM	14.4	B
Anderson Site						
Northbound	1	South of Balls Ferry Rd Off-Ramp	Basic	Fri PM	16.9	B
				Sat PM	14.0	B
	2 NB	Balls Ferry Rd Off-Ramp	Diverge	Fri PM	17.2	B
				Sat PM	13.5	B
	3	Balls Ferry Rd Off-Ramp to North St On-Ramp	Basic	Fri PM	13.7	B
				Sat PM	11.9	B
	4 NB	North St On-Ramp	Merge	Fri PM	18.3	B
				Sat PM	15.2	B
	5	North St On-Ramp to Riverside Ave Off-Ramp	Basic	Fri PM	15.7	B
				Sat PM	13.2	B
Southbound	5	Riverside Ave On-Ramp to North St Off-Ramp	Basic	Fri PM	22.3	C
				Sat PM	17.8	B
	4 SB	North St Off-Ramp	Diverge	Fri PM	2.9	A
				Sat PM	2.9	A
	3	North St Off-Ramp to Balls Ferry Rd On-Ramp	Basic	Fri PM	19.6	C
				Sat PM	16.4	B
	2 SB	Balls Ferry Rd On-Ramp	Merge	Fri PM	26.4	C
				Sat PM	22.1	C
	1	South of Balls Ferry Rd On-Ramp	Basic	Fri PM	23.4	C
				Sat PM	19.1	C
Notes: 1 – Refer to Figures 3.8-1 and 3.8-2 . Source: Kimley-Horn, 2018 (Appendix F).						

Tables 35 and 36 in **Appendix F** provides roadway segment LOS in 2040 under Alternative A. As shown in the tables, all study roadway segments would operate at acceptable LOS with the addition of traffic from Alternative A under Site Access Options 1 and 2. Impacts to roadway segments would be less than significant.

Table 40 in **Appendix F** provides freeway segment LOS for Alternative A under cumulative conditions. As shown in the table, all freeway ramps would operate at acceptable LOS with the addition of traffic

from Alternative A under Site Access Options 1 and 2. Impacts to freeway segments would be less than significant.

As shown in the referenced tables, Alternative A traffic would add to traffic volumes at study intersections, roadway segments, and freeway ramps, causing some of these locations to operate at unacceptable LOS. Significant congestion is expected with and without the project in 2040. Mitigation measures, including pro rata shares, are included in **Section 5.8** to reduce these impacts. With implementation of these measures, all study locations would operate at acceptable LOS with the addition of traffic from Alternative A; therefore, impacts would be less than significant.

Transit, Bicycle, and Pedestrian Facilities

The Redding General Plan and the Shasta County Bikeway Plan include maps of future planned bicycle routes in the vicinity of the Strawberry Fields Site, including Class II bike paths along South Bonnyview Road, Bechelli Lane, and Churn Creek Road. There are currently no pedestrian pathways or bike paths extending through the Strawberry Fields Site that would be impacted by development of Alternative A. As noted in **Section 3.8**, the City of Redding Bikeway Action Plan: 2010-2015 identifies areas adjacent to the Strawberry Fields Site as a potential location for a future bike path. However, the City's bikeway plans have not been fully developed and as currently shown indicate that a pedestrian bridge crossing the Sacramento River west of the Strawberry Fields Site would be required to extend the bike path to the site. Given that there are no known plans for such a bridge, it is anticipated that the City's future bikeway plans can be modified to accommodate the project. Alternative A would not disrupt existing transit services in the vicinity of the Strawberry Fields Site. Cumulative projects would have been planned accordingly to avoid the disruption of City and County bikeway plans; therefore, cumulative impacts would be less than significant.

Alternative A would include the addition of limited pedestrian-oriented walkways for internal circulation between different land uses. There would be sufficient parking available for patrons and employees, and existing transit services would continue to operate regardless of the Proposed Project. Therefore, Alternative A would have a less-than-significant impact on transit, bicycle, and pedestrian facilities in the vicinity of the Strawberry Fields Site.

Land Use

Development in the County and City is guided in part by the General Plans and Zoning Ordinances. Planned development projects within the County and the City are consistent with these documents and policies, which prevent disorderly growth or incompatible land uses. While Alternative A would not be subject to local land use policies, as discussed in **Section 4.9**, Alternative A would be developed in a way that is generally consistent with the City municipal code. Alternative A would not disrupt neighboring land uses, prohibit access to neighboring parcels, or otherwise conflict with neighboring land uses. Therefore, Alternative A would not result in adverse cumulative effects to land use planning.

Agriculture

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Although the Strawberry Fields Site is currently zoned for agricultural production, a Farmland Conversion Impact Rating (FCIR) form was completed for the site, and it received 95 points, which is under the 160-point threshold for evaluation of alternative sites. Alternative A would not contribute to significant cumulative adverse effects to agricultural lands.

Public Services

Water Supply

Alternative A would receive its domestic water supply from either connection to the City's municipal water system infrastructure (Water Supply Option 1) or development of on-site groundwater wells (Water Supply Option 2), as described in **Section 4.10**. As discussed in **Section 3.10**, the City's water supply system's total capacity is approximately 40,040 AFY. The demand on the system in 2015 (24,739 acre-feet [af]) was only 62 percent of the system's total capacity (City of Redding 2017e). The addition of approximately 221,319 gallons per day (gpd; 247.9 AFY) in water demand under Alternative A Water Supply Option 1 would be less than 1.0 percent of the total 2015 demand, and would constitute only 1.6 percent of the current 15,301 AFY surplus within the City's water supply. Following the implementation of Alternative A, the municipal water supply would still have a surplus of approximately 15,053 AFY. According to the City of Redding 2010 Urban Water Management Plan, it is projected annual water demand by 2030 will be to 26,302 AFY, still only approximately 66 percent of the system's capacity. Further, cumulative projects approved for connection to the City's water system would pay the appropriate water capital connection charges and monthly service fees, allowing the City to maintain, or if necessary expand, its water supply infrastructure. Mitigation is included in **Section 5.10** to address the possibility of a municipal water supply connection for Alternative A. With implementation of mitigation, Alternative A Wastewater Option 1 would not result in significant cumulative effects to the City's wastewater system. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed. Therefore, implementation of Alternative A Water Supply Option 2 would not contribute to cumulative adverse effects on municipal water supply systems. Potential cumulative impacts to groundwater are discussed above in *Water Resources*.

Wastewater

Alternative A would receive its wastewater service from either connection to the City's wastewater service system (Wastewater Option 1) or development of an on-site WWTP (Wastewater Option 2), as described in **Section 4.10**. According to the City of Redding 2012 Wastewater Utility Master Plan, future improvement projects for the Clear Creek WWTP include improvements to the levee between the ponds and the Sacramento River and upgrades to two of the existing holding ponds to preserve their use. Dry weather demand at the Clear Creek WWTP has remained steady at 7.0 million gallons per day (MGD) for several years, and it is anticipated the plant has enough capacity for cumulative demand and growth

(Mitchell, 2017). It is estimated that at buildout, the Sunnyhill Lift Station will have an average dry weather demand of 13.09 MGD, leaving a remaining capacity of 4.12 MGD (City of Redding, 2012b). As discussed in **Section 4.10**, the West Side Interceptor is currently at capacity; however, the City's proposed interceptor expansion in 2022, will sufficiently increase capacity to serve Alternative A and other new developments (Bailey, 2017). Therefore, there will be sufficient capacity at the Sunnyhill Lift Station, Clear Creek WWTP, and conveyance pipelines to provide services for both Alternative A and cumulative projects. Any other potential future upgrades to and expansion of infrastructure, when warranted, would be funded through rates charged to customers, and contributions paid by developers. The Tribe would pay the appropriate connection charges and monthly service fees, as would new development, including the cumulative projects listed above. Mitigation is included in **Section 5.10** to address the possibility of a municipal sewer connection. With implementation of mitigation, Alternative A Wastewater Option 1 would not result in significant cumulative effects to the City's wastewater system. Wastewater Option 2 would involve on-site treatment of all wastewater generated by Alternative A and no municipal wastewater systems would be affected; therefore Alternative A Wastewater Option 2 would not contribute to significant cumulative effects to the City's municipal wastewater system.

Solid Waste

The Anderson Landfill maintains a permitted capacity of 1,850 tons per day or 675,250 tons per year (tpy), has nearly 12 million cubic yards of available capacity, and is estimated to have sufficient capacity to maintain operations through 2093 (CalRecycle, 2016). Daily solid waste from Alternative A would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill. Growth resulting from buildout of the County and the City General Plans, including the projects listed in **Section 4.15.2**, would increase disposal of solid waste to the Anderson Landfill. Projected solid waste generation for Alternative A is a small addition to the waste stream and would not significantly decrease the life expectancy of the disposal site and landfills. Further, new development, including the cumulative projects listed above, would pay appropriate monthly service fees, allowing for maintenance of the landfill. As capacity is available for cumulative growth, including Alternative A, no significant cumulative effects to solid waste services would occur.

Law Enforcement

New development, including the cumulative projects listed above, would fund in part County and City services including law enforcement through development fees and property tax. As discussed in **Section 2.3.2**, under Alternative A, law enforcement services would be provided by the Shasta County Sheriff's Office (SCSO) with assistance from the Redding Police Department (RPD). A Tribal security force would provide security patrol and monitoring needs of the casino as needed. The SCSO and RPD may need additional facilities and equipment to meet the increased need for services due to cumulative growth in the region, including Alternative A. Due to the potential for an increase in calls for service during operation of Alternative A, a potentially significant adverse effect could occur. Additionally, an increase

in service demands to the California Highway Patrol (CHP) may result from development of the project. However, payments to the State under the Tribal-State Compact would offset any impacts to the CHP.

With implementation of the on-site security measures and the conditions of a service agreement between the Tribe and the County and/or City, as discussed in **Section 5.10.3**, payments by the Tribe would compensate the County and/or City for costs of impacts associated with increased law enforcement services at the Strawberry Fields Site. Therefore, with mitigation, Alternative A would result in a less-than-significant cumulative effect on public law enforcement services.

Fire Protection and Emergency Medical Services

New development, including cumulative projects listed above, would be required to fund City and/or County services including fire protection and emergency medical response in part through development fees and property taxes. Emergency medical costs are paid primarily by the individual requiring service. Due to the potential for an increase in calls for fire protection services during operation of Alternative A, a potentially significant impact to the Shasta County Fire Department (SCFD) and/or the Redding Fire Department (RFD) could occur. With implementation of a service agreement between the Tribe and SCFD and/or RFD, as discussed in **Section 5.10**, payments by the Tribe would compensate SCFD and/or RFD for costs of impacts associated with increased fire protection services at the Strawberry Fields Site. Therefore, with implementation of mitigation, Alternative A would result in a less-than-significant cumulative impact on public fire protection services.

American Medical Response (AMR), the Shasta Regional Medical Center, and the Mercy Medical Center provide ambulance services via a contractual agreement to the City (City of Redding, 2016g). AMR, the Mercy Medical Center, and the Shasta Regional Medical Center are located approximately 3.8 miles northwest, 3.6 miles northwest and approximately 4.1 miles north of the Strawberry Fields Site, respectively. As described in **Section 4.10**, the two emergency rooms have sufficient capacity to accommodate projected cumulative growth in the region. Mitigation in **Section 5.10** includes a measure for the Tribe to enter into a service agreement to reimburse SCFD and/or RFD for additional demands created by Alternative A. With this mitigation, Alternative A would not result in a significant cumulative effect on emergency medical services.

Electricity and Natural Gas

Individual projects, including the cumulative projects listed above, would be responsible for paying development or user fees to receive electric and natural gas services. As such, the Tribe would pay a fair share of the upgrades needed to avoid affecting the service of existing customers and any infrastructure necessary to provide service to Alternative A. Redding Electric Utility (REU) may require electrical line upgrades in order to serve Alternative A (**Section 4.10**). Pacific Gas and Electric Company (PG&E) is expected to have the capacity to provide service to the Strawberry Fields Site (**Section 4.10**, Perez, 2017). Alternative A would not cause significant cumulative effects to energy or natural gas providers.

Noise

The following identifies possible impacts from project-related noise sources in the cumulative year 2040 for Alternative A, such as traffic, HVAC systems, parking structures and lots, and deliveries.

Traffic Noise

Site Access Option 1

Noise level measurements were collected along representative off-site roadways that would experience an increase in traffic as result of the project. Increases in noise levels resulting from the addition of project traffic were quantified using the baseline cumulative year (2040) weekday PM peak hour traffic volumes and the cumulative year (2040) plus project weekday PM peak hour traffic volumes from the traffic impact analysis included as **Appendix F**. The change in cumulative traffic volumes and the resulting change in ambient noise levels relative to the cumulative year baseline near the closest sensitive receptors to roadways that would experience the largest increase in project-related traffic are shown in **Table 4.15-11**.

Residential sensitive receptors in the vicinity of study area roadways that would experience exceedances of the federal Noise Abatement Criteria (NAC) standard of 67.0 A-weighted decibels (dBA) equivalent sound level (Leq) with the addition of project vehicle trips are discussed below. Noise impacts associated with cumulative year project traffic on Bechelli Lane south of South Bonnyview Road were analyzed separately; the results of this analysis (included in **Appendix G**) based on the noise standards in the City General Plan's Noise Element are summarized below.

Bechelli Lane south of South Bonnyview Road

As shown in **Table 4.15-11**, project related traffic would cause ambient noise levels along the segment of Bechelli Lane south of Bonnyview Road to increase from 62.4 to 65.3 dBA Day-Night Average Sound Level (Ldn) under cumulative year conditions. The nearest receptor to this roadway is the Hilton Garden Inn hotel located 50 feet southwest. The addition of project traffic under Alternative A Site Access Option 1 would cause the cumulative year ambient noise level to increase by 3.0 dBA Ldn. Because this increase at the outdoor activity area of the Hilton Garden Inn would exceed the 3.0 dBA significance threshold (refer to **Table 3.11-5**), cumulative noise impacts associated with project traffic on Bechelli Lane south of South Bonnyview Road under Alternative A Site Access Option 1 would be significant. The site access improvements included in **Section 2.3.2** would reduce this impact to a less-than-significant level by requiring the construction of a sound barrier around the outdoor pool area of the Hilton Garden Inn.

Site Access Option 2

The change in cumulative traffic volumes and the resulting change in ambient noise levels relative to the cumulative year baseline are shown in **Table 4.15-11**. Residential sensitive receptors in the vicinity of

TABLE 4.15-11
CUMULATIVE YEAR (2040) TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE A SITE ACCESS OPTIONS 1 AND 2

Roadway Segment	Cumulative Year (2040)		Cumulative Year (2040) Plus Alternative A							
	Friday PM Peak Hour	dBA Leq	Site Access Option 1				Site Access Option 2			
			Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?	Friday PM Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
Bechelli Lane south of South Bonnyview Road ¹	155	62.4	1,330	65.3	3.0	Yes	1,013	64.7	2.4	No
Bechelli Lane north of South Bonnyview Road	1,980	66.1	2,022	66.2	0.1	No	2,022	66.2	0.1	No
South Bonnyview Road between SB I-5 off-ramp and Bechelli Lane	3,854	64.0	4,569	64.7	0.7	No	4,252	64.4	0.4	No
South Bonnyview Road between East Bonnyview Road and Bechelli Lane	3,006	63.0	3,088	63.1	0.1	No	3,088	63.0	0.1	No
Churn Creek Road between Alrose Lane and Victor Avenue	1,565	64.2	1,602	64.3	0.1	No	1,602	64.3	0.1	No
Churn Creek Road between Smith Road and Knighton Road	322	63.1	322	63.1	0.0	No	639	66.1	3.0	Yes
Smith Road between Churn Creek Road and Adra Way	79	59.8	79	59.8	0.0	No	396	66.8	7.0	Yes
Adra Way north of Smith Road ¹	9	58.4	9	58.4	0.0	No	325	60.0	1.6	No
Notes: Bolded noise levels indicate exceedances of noise thresholds. 1 - Adra Way and Bechelli Lane off-site access improvements were analyzed in Appendix G based on projected 2040 traffic volumes, and noise levels are provided in dBA Ldn rather than dBA Leq. Source: Appendix F, Appendix G.										

study area roadways that would experience exceedances of the NAC standard of 67.0 dBA Leq with the addition of project vehicle trips under Site Access Option 2 are discussed below.

Bechelli Lane south of South Bonnyview Road

As shown in **Table 4.15-11**, project related traffic would cause ambient noise levels along the segment of Bechelli Lane south of Bonnyview Road to increase from 62.4 to 64.7 dBA Ldn under cumulative year conditions. The nearest receptor to this roadway is the Hilton Garden Inn hotel located 50 feet southwest. The addition of project traffic at the outdoor activity area of the Hilton Garden Inn under Alternative A Site Access Option 2 would cause the cumulative year ambient noise level to increase by 2.4 dBA Ldn. Because this increase would be below the 3.0 dBA significance threshold (refer to **Table 3.11-5**), cumulative noise impacts associated with project traffic on Bechelli Lane under Alternative A Site Access Option 2 would be less than significant, and no mitigation is required.

Churn Creek Road between Smith Road and Knighton Road and Smith Road between Churn Creek Road and Adra Way

There are multiple sensitive receptors located along the study area segments of Churn Creek Road and Smith Road, varying from approximately 30 to 320 feet in distance from the roadway. Although the addition of project traffic to these roadway segments would result in an audible increase (an increase of more than 3.0 dBA Leq) in traffic noise levels under Site Access Option 2, the resulting ambient noise level would be below the 67.0 dBA Leq threshold for residential sensitive receptors. Therefore, noise associated with increased traffic volumes under Site Access Option 2 would not have a significant impact on sensitive receptors in the vicinity of these roadways.

Adra Way north of Smith Road

As shown in **Table 4.15-11**, project-related traffic would cause ambient noise levels along the segment of Adra Way north of Smith Road to increase from 58.4 to 60.0 dBA Ldn under cumulative year conditions. The nearest receptor to this roadway is located 25 feet east. Because there is no feasible mitigation available to maintain ambient noise levels in the vicinity of residential sensitive receptors at less than 60.0 dBA Ldn, the noise criteria shown in **Table 3.11-6** apply. Per those criteria, because the cumulative year ambient noise level (58.4 dBA Ldn; refer to **Appendix G**) would be less than 60.0 dBA Ldn, an increase in the ambient noise level of 5 dBA or more would be considered significant. The addition of project traffic to Adra Way under Alternative A Site Access Option 2 would cause the cumulative year ambient noise level to increase by 1.6 dBA Ldn, from 58.4 dBA Ldn under baseline conditions to 60.0 dBA Ldn. Because this increase would be less than 5.0 dBA, cumulative noise impacts associated with project traffic on Adra Way under Alternative A Site Access Option 2 would also be less than significant. No mitigation is required.

Vibration and Other Noise Sources

Cumulative projects would be required to comply with state and local noise provisions. These provisions include mitigation requirements when noise levels exceed compatible use standards. The potential for

cumulative impacts associated with vibration and other noise sources from Alternative A would be the same as the direct effects of the project described in **Section 4.11**.

Noise and vibration associated with the construction of cumulative projects could contribute to significant impacts on nearby sensitive receptors. Noise and vibration impacts from Alternative A would be reduced to less-than-significant levels through the BMPs provided in **Section 2.3.2**, and it is reasonably assumed that similar BMPs would be employed for cumulative projects to reduce noise and vibration impacts.

Hazardous Materials

As discussed in **Section 4.12**, with the incorporation of the BMPs in **Section 2.3.2**, implementation of Alternative A would not result in direct effects associated with hazardous materials management. Approved projects, including those listed within **Section 4.15.2**, would be required to follow applicable federal and state regulations concerning hazardous materials management, including the implementation of construction BMPs dealing with hazardous materials management through the NPDES permitting process. With the implementation of BMPs outlined in **Section 2.3.2**, Alternative A, in combination with other projects, would not result in significant cumulative effects associated with hazardous materials.

Aesthetics

New development, including cumulative projects listed in **Section 4.15.2** would be consistent with local land use regulations, including associated design guidelines. Cumulative effects would include a shift from open, undeveloped lots to views of developed areas, as well as an increase in the density of urban uses within the City and the County. Alternative A would not be out of character with typical roadside development adjacent to I-5, nor would it impede views of scenic resources. Additionally, Alternative A would not result in the removal of any mature trees and the majority of the site (approximately 80 percent), would remain in undeveloped open space. By clustering the proposed development in the north, near existing commercial development within the City, the visual effects of the project would be mitigated through the project design. With the incorporation of design features outlined in **Section 2.3.2**, Alternative A would not result in significant adverse cumulative impacts to aesthetic resources.

4.15.4 ALTERNATIVE B – PROPOSED PROJECT WITH NO RETAIL ALTERNATIVE

Alternative B would be constructed on the same parcel of land as Alternative A; therefore, potentially cumulative actions and projects would be the same for Alternative B as that of Alternative A. Refer to **Section 4.15.2**.

Cumulative Effects Previously Addressed

Cumulative effects to geology and soils, water resources, biological resources, cultural resources, socioeconomic conditions, land use, public services, hazardous materials, and aesthetics as a result of Alternative B would be similar to those of Alternative A. Refer to **Section 4.15.3** for a detailed

discussion on potential cumulative effects that could occur as a result of Alternative A. Cumulative effects under Alternative B would be slightly lesser due to the elimination of the regional retail building. Therefore, implementation of Alternative B would also result in minimal adverse cumulative effects to these resource areas. Other resource areas are addressed in detail below.

Air Quality

Operational Emissions

Cumulative operation of Alternative B would be similar to Alternative A. Unmitigated emission estimates for Alternative B in the cumulative year 2040 are provided in **Table 4.15-12**. CalEEMod output files are included in **Appendix I**.

For information about the Strawberry Fields Site attainment status and potential for regional air quality impacts, refer to **Section 4.15.3**. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. However, BMPs provided in **Section 2.3.2** would further reduce project-related emissions. Alternative B would not cumulatively adversely impact the region's air quality.

TABLE 4.15-12
ALTERNATIVE B UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	1.94	0.00	0.05	0.00	0.00	0.00
Energy	0.03	0.30	0.26	0.00	0.02	0.02
Mobile	1.09	17.20	9.94	0.08	5.74	1.56
Stationary	0.04	0.19	0.11	0.00	0.01	0.01
Total Emissions	3.10	17.69	10.36	0.08	5.77	1.59
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4) Source: CalEEMod, 2016; AES, 2018.						

CO Hot Spots Analysis

A CO Hot Spots Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Implementation of Alternative B, after mitigation, would result in the intersection of South Bonnyview Road and the I-5 NB Ramps, as well as the intersection of Churn Creek Road and Alrose Lane, to operate at LOS D during Friday peak hours. **Tables 4.15-13** and **4.15-14** summarize the results of the CO Hot Spots Analysis for each intersection, respectively; CO Hot Spots Analysis calculations are shown in **Appendix I**.

TABLE 4.15-13
SOUTH BONNYVIEW ROAD AT I-5 NB RAMPS
SUMMARY OF LOCALIZED CUMULATIVE CO ANALYSIS (1 AND 8-HOUR)

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.46	3.10	2.20
25 Feet	3.04	2.82	1.90
50 Feet	2.89	2.73	1.80
100 Feet	2.75	2.63	1.70
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Source: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

TABLE 4.15-14
CHURN CREEK ROAD AT ALROSE LANE
SUMMARY OF LOCALIZED CUMULATIVE CO ANALYSIS (1 AND 8-HOUR)

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.04	2.83	1.90
25 Feet	2.75	2.64	1.70
50 Feet	2.66	2.58	1.63
100 Feet	2.59	2.53	1.58
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Source: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

As shown in **Table 4.15-13**, CO concentrations at the intersection of South Bonnyview Road and I-5 NB Ramps, as well as the intersection of Churn Creek Road and Alrose Lane, do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

Climate Change

The climate change analysis methodology for Alternative B is the same as Alternative A. **Table 4.15-15** estimates Alternative B construction GHG emissions at 933.55 metric tons (MT) of CO₂e per year and operational emissions of 17,869.89 MT of CO₂e per year. The total project-related GHG emissions estimate was calculated by amortizing construction emissions of approximately 1400.33 MT of CO₂ over 1.5 years and adding them to operational emissions.

GHG emissions resulting from Alternative B is similar to Alternative A. BMPs have been provided in **Section 2.3.2** to reduce project-related GHG emissions. Operational BMPs for Alternative B are similar

to those provided in Alternative A. Therefore, with the implementation of all feasible BMPs provided in **Section 2.3.2**, Alternative B would not result in a significant adverse cumulative impact associated with climate change.

TABLE 4.15-15
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE B

Emission Source	GHG Emissions in MT CO ₂ e
Construction	
Construction ¹	1185.48
Operation	
Area	0.11
Mobile (Vehicle Trips)	20,108.59
Stationary Sources	20.11
Electricity Usage	535.41
Solid Waste	620.58
Water/Wastewater	190.42
<i>Operation Subtotal</i>	<i>21,475.22</i>
Total Project-Related GHG Emissions	22,660.70
Notes: 1 - Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions.	
Source: CalEEMod, 2016; AES, 2018.	

The California strategies and resulting climate change effects discussed under Alternative A are the same for Alternative B.

Transportation

Tables 28 and 29 in **Appendix F** provides intersection LOS in 2040 under Alternative B for Site Access Options 1 and 2, respectively. As indicated in the tables, the following study intersections are projected to operate at unacceptable LOS under cumulative conditions:

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Alrose Lane (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM); and
- Churn Creek Road / Rancho Road (both Site Access Options, Friday PM).

Roadway segment and freeway segment 2040 LOS under Alternative B would operate better than under Alternative A. Because Alternative A roadway and freeway segment LOS in the cumulative year (2040) would be acceptable, Alternative B roadway and freeway segment LOS would also be acceptable.

Alternative B traffic will add to the background congestion of the freeway mainline and ramps. There are mainline segment and ramp locations that will operate at unacceptable LOS as a result of Alternative B, or will operate at unacceptable LOS without the project and experience an increase in delay with the addition of the project. Significant congestion is expected with and without the project. Fair share mitigation for project impacts is recommended in **Section 5.8**.

Transit, Bicycle, and Pedestrian Facilities

Cumulative impacts to transit, bicycle, or pedestrian facilities would be the same or less than those associated with Alternative A. Refer to **Section 4.15.3**. No cumulative impacts are anticipated.

Noise

The contributions of Alternative B to cumulative noise impacts would be similar to or lesser than those described under Alternative A.

The addition of project traffic under Alternative B Site Access Option 1 to Bechelli Lane south of South Bonnyview Road would cause the cumulative year ambient noise level to increase by 2.5 dBA Ldn, from 62.4 dBA Ldn under baseline conditions to 64.8 dBA Ldn. Because this increase would not exceed the 3.0 dBA significance threshold (refer to **Table 3.11-5**), cumulative noise impacts associated with project traffic on Bechelli Lane south of South Bonnyview Road under Alternative B Site Access Option 1 would be less than significant, and no mitigation is required.

4.15.5 ALTERNATIVE C – REDUCED INTENSITY ALTERNATIVE

Alternative C would be constructed on the same parcel of land as Alternative A; therefore, potentially cumulative actions and projects would be the same for Alternative C as that of Alternative A. Refer to **Section 4.15.2**.

Cumulative Effects Previously Addressed

Cumulative effects to geology and soils, water resources, biological resources, cultural resources, socioeconomic conditions, land use, public services, hazardous materials, and aesthetics as a result of Alternative C would be similar to those of Alternative A because Alternative C is a scaled down version of that alternative. Refer to **Section 4.15.3** for a detailed discussion on potential cumulative effects that could occur as a result of Alternative A. Cumulative effects under Alternative C would be similar to, but less severe than, those under Alternative A.

Air Quality

Operational Emissions

Cumulative operation of Alternative C would be similar to Alternative A. The cumulative year unmitigated 2040 operational emissions for Alternative C are provided in **Table 4.15-16**. CalEEMod output files are included in **Appendix I**.

TABLE 4.15-16
ALTERNATIVE C UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.49	0.00	0.06	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	1.66	21.32	20.53	0.17	14.42	3.92
Stationary	0.05	0.24	0.31	0.00	0.02	0.02
Total Emissions	4.2	21.56	20.90	0.17	14.44	3.94
<i>De Minimis Levels</i>	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4) Source: CalEEMod, 2016; AES, 2018.						

For information about the Strawberry Fields Site attainment status and potential for regional air quality impacts, refer to **Section 4.15.3**. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. However, BMPs provided in **Section 2.3.2** would further reduce project related emissions. Alternative C would not cumulatively adversely impact the region's air quality.

Carbon Monoxide Hot Spots Analysis

A CO Hot Spots Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Implementation of Alternative C, after mitigation, would result in the intersection of South Bonnyview Road and the I-5 NB Ramps operating at an LOS D during Friday peak hours. **Table 4.15-17** summarizes the results of the CO Hot Spots Analysis; CO Hot Spots Analysis calculations are shown in **Appendix I**.

As shown in **Table 4.15-17**, CO concentrations at the intersection of South Bonnyview Road and I-5 NB Ramps do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

Climate Change

The climate change analysis methodology for Alternative C is the same as Alternative A. **Table 4.15-18** estimates Alternative C construction GHG emissions at 585.31 MT of CO_{2e} per year and operational

emissions at 18,343.93 MT of CO₂e per year. The total project-related GHG emissions estimate was calculated by amortizing construction emissions of approximately 877.97 MT of CO₂ over 1.5 years and adding them to operational emissions.

TABLE 4.15-17
SUMMARY OF LOCALIZED CUMULATIVE CO ANALYSIS (1 AND 8-HOUR) – ALTERNATIVE C

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.47	3.14	2.20
25 Feet	3.04	2.84	1.90
50 Feet	2.90	2.74	1.80
100 Feet	2.75	2.64	1.70
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Source: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

TABLE 4.15-18
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE C

Emission Source	GHG Emissions in MT CO ₂ e
Construction	
Construction ¹	1,161.48
Operational	
Area	0.12
Mobile (Vehicle Trips)	18,142.27
Stationary Sources	241.14
Electricity Usage	515.16
Solid Waste	591.41
Water/Wastewater	218.98
<i>Operation Subtotal</i>	<i>19,709.08</i>
Total Project-Related GHG Emissions	20,870.56
Notes: 1 - Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions. Source: CalEEMod, 2016; AES, 2018.	

GHG emissions resulting from Alternative C is similar to that resulting from Alternative A. BMPs have been provided in **Section 2.3.2** to reduce project-related GHG emissions. Operational BMPs for Alternative C are similar to those provided in Alternative A. Therefore, with the implementation of all feasible BMPs provided in **Section 2.3.2**, Alternative C would not result in a significant adverse cumulative impact associated with climate change. The California strategies and resulting climate change effects discussed under Alternative A are the same for Alternative C.

Transportation

Tables 28 and 29 in **Appendix F** provides intersection LOS in 2040 under Alternative C for Site Access Options 1 and 2, respectively. As indicated in the tables, the following study intersections are projected to operate at unacceptable LOS under cumulative conditions:

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Alrose Lane (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Victor Avenue (Site Access Option 1, Friday PM; Site Access Option 2, Friday and Saturday PM); and
- Churn Creek Road / Rancho Road (both Site Access Options, Friday PM).

Roadway segment and freeway segment 2040 LOS under Alternative C would operate better than under Alternative A. Because Alternative A roadway and freeway segment LOS in the cumulative year (2040) would be acceptable, Alternative C roadway and freeway segment LOS would also be acceptable.

Alternative C traffic will add to the background congestion of the freeway mainline and ramps. There are mainline segment and ramp locations that will operate at unacceptable LOS as a result of Alternative C, or will operate at unacceptable LOS without the project and experience an increase in delay with the addition of the project. Significant congestion is expected with and without the project. Fair share mitigation for project impacts is recommended in **Section 5.8**.

Transit, Bicycle, and Pedestrian Facilities

Cumulative impacts to transit, bicycle, or pedestrian facilities would be the same or less than those associated with Alternative A. Refer to **Section 4.15.3**. No cumulative impacts are anticipated.

Noise

The contributions of Alternative C to cumulative noise impacts would be similar to or lesser than those described under Alternative A.

The addition of project traffic under Alternative C Site Access Option 1 to Bechelli Lane south of South Bonnyview Road would cause the cumulative year ambient noise level to increase by 2.7 dBA Ldn, from 62.4 dBA Ldn under baseline conditions to 65.0 dBA Ldn. Because this increase would not exceed the 3.0 dBA significance threshold (refer to **Table 3.11-5**), cumulative noise impacts associated with project traffic on Bechelli Lane south of South Bonnyview Road under Alternative C Site Access Option 1 would be less than significant, and no mitigation is required.

4.15.6 ALTERNATIVE D – NON-GAMING ALTERNATIVE

Alternative D would be constructed on the same parcel of land as Alternative A; therefore, potentially cumulative actions and projects would be the same for Alternative D as that of Alternative A. Refer to **Section 4.15.2**.

Cumulative Effects Previously Addressed

Cumulative effects to geology and soils, water resources, biological resources, cultural resources, socioeconomic conditions, land use, public services, hazardous materials, and aesthetics as a result of Impacts of Alternative D would be similar to, but in most cases significantly less severe than, those of Alternative A because Alternative D is a scaled down version of that alternatives, with no casino on site. Refer to **Section 4.15.3** for a detailed discussion on potential cumulative effects that could occur as a result of Alternative A. Other resource areas are addressed in detail below.

Air Quality

Operational Emissions

Cumulative operation of Alternative D would be similar to Alternative A; however, on a smaller scale. The cumulative year unmitigated 2040 operational emissions for Alternative D are provided in **Table 4.15-19**. CalEEMod output files are included in **Appendix I**.

TABLE 4.15-19
ALTERNATIVE D UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	1.45	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.01	0.00	0.00
Mobile	0.84	11.35	9.74	0.08	6.62	1.80
Stationary	0.04	0.18	0.28	0.00	0.02	0.02
Total Emissions	2.33	11.53	10.02	0.09	6.64	1.82
<i>De Minimis</i> Levels	N/A	N/A	N/A	N/A	N/A	N/A
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4) Source: CalEEMod, 2016; AES, 2018.						

For information about the Strawberry Fields Site attainment status and potential for regional air quality impacts, refer to **Section 4.15.3**. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. However, BMPs provided in **Section 2.3.2** would further reduce project related emissions. Alternative C would not cumulatively adversely impact the region's air quality.

CO Hot Spots Analysis

A CO Hot Spots Analysis was performed using a simplified Caline4 Carbon Monoxide Analysis. Implementation of Alternative C, after mitigation, would result in the intersection of South Bonnyview Road and the I-5 SB Ramps to operate at LOS D during Friday peak hours. **Table 4.15-20** summarizes the results of the CO Hot Spots Analysis; CO Hot Spots Analysis calculations are shown in **Appendix I**.

TABLE 4.15-20
SUMMARY OF LOCALIZED CUMULATIVE CO ANALYSIS (1 AND 8-HOUR) – ALTERNATIVE D

Distance	Friday PM Peak 1-Hour (ppm)	Saturday PM Peak 1-Hour (ppm)	8-Hour (ppm)
E.O.R.	3.72	3.33	2.37
25 Feet	3.19	2.96	2.01
50 Feet	3.01	2.83	1.88
100 Feet	2.84	2.71	1.76
CO NAAQS	9	9	35
Significant	No	No	No
Notes: E.O.R. = Edge of Roadway; ppm = parts per million. Source: EMFAC2014, 2017; USEPA, 2013c; BAAQMD, 1999; CARB, 2017a.			

As shown in **Table 4.15-20**, CO concentrations at the intersection of South Bonnyview Road and I-5 SB Ramps do not exceed the CO NAAQS; therefore, this is a less-than-significant impact.

Climate Change

The climate change analysis methodology for Alternative D is the same as for Alternative A; however, on a smaller scale. **Table 4.15-21** estimates Alternative D construction GHG emissions at 308.05 MT of CO₂e per year and operational emissions at 6,747.00 MT of CO₂e per year. The total project-related GHG emissions estimate was calculated by amortizing construction emissions of approximately 462.08 MT of CO₂ over 1.5 years and adding them to operational emissions.

GHG emissions resulting from Alternative D are similar to Alternative A; however, on a smaller scale. BMPs have been provided in **Section 2.3.2** to reduce project-related GHG emissions. Operational BMPs for Alternative D are similar to those provided in Alternative. Therefore, with the implementation of all feasible BMPs provided in **Section 2.3.2**, Alternative D would not result in a significant adverse cumulative impact associated with climate change.

The California strategies and resulting climate change effects discussed under Alternative A are the same for Alternative D.

TABLE 4.15-21
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE D

Emission Source	GHG Emissions in MT CO₂e
Construction	
Construction ¹	523.81
Operational	
Area	0.01
Mobile (Vehicle Trips)	8,544.95
Stationary Sources	247.25
Electricity Usage	101.11
Solid Waste	56.33
Water/Wastewater	80.06
<i>Operation Subtotal</i>	<i>9,029.71</i>
Total Project-Related GHG Emissions	9,553.52
Notes: 1 - Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions. Source: CalEEMod, 2016; AES, 2018.	

Transportation

Tables 28 and 29 in **Appendix F** provides intersection LOS in 2040 under Alternative D for Site Access Options 1 and 2, respectively. As indicated in the tables, the following study intersections are projected to operate at unacceptable LOS under cumulative conditions:

- South Bonnyview Road / Bechelli Lane (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 SB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / I-5 NB Ramps (both Site Access Options, Friday and Saturday PM);
- South Bonnyview Road / Churn Creek Road (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Alrose Lane (both Site Access Options, Friday and Saturday PM);
- Churn Creek Road / Victor Avenue (both Site Access Options, Friday PM); and
- Churn Creek Road / Rancho Road (both Site Access Options, Friday PM).

Roadway segment and freeway segment 2040 LOS under Alternative D would operate better than under Alternative A. Because Alternative A roadway and freeway segment LOS in the cumulative year (2040) would be acceptable, Alternative D roadway and freeway segment LOS would also be acceptable.

Alternative D will add to the background congestion of the freeway mainline and ramps. There are mainline segment and ramp locations that will operate at unacceptable LOS as a result of Alternative D, or will operate at unacceptable LOS without the project and experience an increase in delay with the

addition of the project. Significant congestion is expected with and without the project. Fair share mitigation for project impacts is recommended in **Section 5.8**.

Transit, Bicycle, and Pedestrian Facilities

Cumulative impacts to transit, bicycle, or pedestrian facilities would be the same or less than those associated with Alternative A. Refer to **Section 4.15.3**. No cumulative impacts are anticipated.

Noise

The contributions of Alternative D to cumulative noise impacts would be similar to or lesser than those described under Alternative A.

The addition of project traffic under Alternative D Site Access Option 1 to Bechelli Lane south of South Bonnyview Road would cause the cumulative year ambient noise level to increase by less than 3.0 dBA Ldn, as the increase in traffic would be lesser than under Alternatives A through C. Because this increase would not exceed the 3.0 dBA significance threshold (refer to **Table 3.11-5**), cumulative noise impacts associated with project traffic on Bechelli Lane south of South Bonnyview Road under Alternative D Site Access Option 1 would be less than significant, and no mitigation is required.

4.15.7 ALTERNATIVE E – ANDERSON SITE ALTERNATIVE

The effects of Alternative E in conjunction with the cumulative setting identified above are presented below. Effects are described for each of the subject areas of the environment described in other portions of this EIS.

Geology and Soils

Cumulative effects of Alternative E on geology and soils would be similar to those described under Alternative A in **Section 4.15.3**. Therefore, implementation of Alternative E would not result in significant cumulative effects to geology or soils.

Water Resources

Surface Water and Flooding

As described above in **Section 4.15.3**, potential cumulative effects to water resources include increased sedimentation, increased pollution, and increased stormwater flows. Changes in runoff characteristics may increase stream volumes, increase stream velocities, increase peak discharges, shorten the time to peak flows, and lessen groundwater contributions to stream base-flows during non-precipitation periods. Urban areas also have sources of non-point source pollution that can affect regional water quality. Construction and implementation of the proposed development projects listed above may likewise affect water quality by increasing sedimentation and pollution, and increasing stormwater flows. However, the

projects would include erosion control measures in compliance with the NPDES permit program and the USEPA.

As described in **Section 4.3** and detailed in **Appendix C**, the grading of the Anderson Site under Alternative E has been designed such that there is no net import or export of material; while a portion of the existing floodplain would be filled to accommodate the Proposed Project, stormwater storage that would be lost from these areas would be relocated to the southern portion of the Anderson Site in the form of the 62-af wet pond complex described in **Section 4.3**. Additionally, the system of inlets, perforated storm drains, and wet ponds described in detail in **Section 4.3** would provide adequate storage and quality control of stormwater runoff on the Anderson Site. As a result of this grading and stormwater management design, there would be no net increase in stormwater flows at any properties up- or downstream of the Anderson Site as a result of the implementation of Alternative E (**Appendix C**). Therefore, implementation of Alternative E in combination with other developments would not result in significant cumulative effects to surface water and flooding.

Water Quality

Cumulative effects of Alternative E on water quality would be similar to those described under Alternative A in **Section 4.15.3**. Therefore, implementation of Alternative E would not result in significant cumulative effects to water quality.

Groundwater Supply

As discussed in **Section 2.7**, Alternative E involves two options for water supply: off-site (Option 1), under which water would be supplied to the Anderson Site by the City of Anderson, and on-site (Option 2), under which groundwater well drilled on site would satisfy 100 percent of the potable water demand under Alternative E. As described in **Section 4.3** and **Appendix B**, the City of Anderson's Automall Well, located immediately adjacent to the northeast corner of the Anderson Site, provides water to existing users within the vicinity of the Anderson Site.

As discussed in **Section 4.3** and **Appendix B**, the Redding Groundwater Basin is not currently in a state of overdraft, and the City of Anderson has indicated that its water system has adequate capacity to meet the projected water demand of Alternative E. Thus, Alternative E Water Supply Option 1 would not contribute to any cumulatively significant impacts to groundwater levels. As analyzed in **Section 4.3**, due to the characteristics of the Basin and the fact that the potable water demand under Alternative E would be lesser than Alternative A, the operation of an on-site well to meet the water demand of the project under Alternative E Water Supply Option 2 would also not contribute to a significant cumulative impact on groundwater levels, provided that the proposed well is drilled more than 100 feet from the nearest neighboring well.

Groundwater Quality

As described in **Section 2.7**, all wastewater generated under Alternative E would be disposed of via a connection to the City of Anderson's municipal sewer system. Wastewater at the City of Anderson's WWTP is treated and discharged to the Sacramento River under the terms of a RWQCB NPDES permit (City of Anderson, 2017b). Therefore, Alternative E would not result in significant adverse cumulative effects to groundwater quality.

Air Quality

Operational Emissions

Cumulative operation of Alternative E would be similar to Alternative A. Unmitigated emission estimates for Alternative E in the cumulative year 2040 are provided in **Table 4.15-22**. CalEEMod output files are included in **Appendix I**.

TABLE 4.15-22
ALTERNATIVE E UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	2.49	0.00	0.06	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	2.19	27.89	27.70	0.23	19.60	5.33
Stationary	0.08	0.35	0.74	0.00	0.06	0.06
Total Emissions	4.76	28.24	28.5	0.23	19.66	5.39
<i>De Minimis Levels</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; AES, 2018.						

For information about the region's attainment status and potential for regional air quality impacts, refer to **Section 4.15.3**. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. However, BMPs provided in **Section 2.3.2** would further reduce project-related emissions. Alternative E would not cumulatively adversely impact the region's air quality.

CO Hot Spots Analysis

No CO Hot Spots Analysis was performed because no intersection under Alternative E would degrade from LOS A, B, or C to LOS D, E, or F.

Climate Change

The climate change analysis methodology for Alternative E is the same as Alternative A. **Table 4.15-23** estimates Alternative E construction GHG emissions at 1,004.73 MT of CO₂e per year and operational emissions of 25,203.87 MT of CO₂e per year. The total project-related GHG emissions estimate was calculated by amortizing construction emissions of approximately 1,507.10 MT of CO₂ over 1.5 years and adding them to operational emissions.

TABLE 4.15-23
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE E

Emission Source	GHG Emissions in MT CO ₂ e
Construction	
Construction ¹	1,262.66
Operational	
Area	0.12
Mobile (Vehicle Trips)	24,516.97
Stationary Sources	721.65
Electricity Usage	597.24
Solid Waste	647.74
Water/Wastewater	222.65
<i>Operation Subtotal</i>	<i>26,706.37</i>
Total Project-Related GHG Emissions	27969.03
Notes: 1 - Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions.	
Source: CalEEMod, 2016; AES, 2018.	

GHG emissions resulting from Alternative E is similar to Alternative A. BMPs have been provided in **Section 2.3.2** to reduce project-related GHG emissions. Operational BMPs for Alternative E are similar to those provided in Alternative A. Therefore, with the implementation of all feasible BMPs provided in **Section 2.3.2**, Alternative E would not result in a significant adverse cumulative impact associated with climate change.

The California strategies and resulting climate change effects discussed under Alternative A are the same for Alternative E.

Biological Resources

Wildlife and Habitats

As discussed in **Section 4.5.5**, approximately 25 acres of non-native annual grassland on the Anderson Site would be directly impacted by Alternative E. The remaining 30 acres of oak woodland and seasonal wetland would be graded for use as a material borrow area and stormwater infiltration and storage. Designated critical habitat and EFH do not occur within or adjacent to the Anderson Site. Although the

grassland and woodland habitats within the Anderson Site may be suitable for several special-status species, they are not, in and of themselves, listed as critical or sensitive under federal designation. Additionally, habitats on the Anderson Site are highly fragmented and disturbed by adjacent highway and development on all sides. Therefore, no significant adverse cumulative effects would occur to wildlife habitat.

Special-Status Species

As discussed in **Section 3.5**, six special-status wildlife species have the potential to occur on the Anderson Site. Mitigation identified in **Section 5.5** includes measures that would avoid or minimize impacts to special-status species. Similarly, all other projects in the region are required to comply with the FESA by avoiding or minimizing effects to protected species. Therefore, after mitigation, implementation of Alternative E would not contribute to adverse cumulative effects to special-status species.

Migratory Birds

Alternative E would not result in significant cumulative effects to nesting migratory birds. However, disturbance to migratory bird habitats and increases in human activity from other proposed projects in the area could incrementally contribute to past, present, and future effects to migratory birds. The development of other projects considered in the cumulative analysis are required to comply with the MBTA, which will reduce the overall impact to migratory birds. Mitigation measures provided in **Section 5.5** would minimize significant effects to migratory birds. Therefore, implementation of Alternative E would not result in significant cumulative effects to nesting migratory birds.

Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Thus, nighttime lighting from the operation of the Alternative E in combination with cumulative growth could have a potentially significant impact on both migrating and local bird populations. Design features to reduce potentially significant nighttime lighting impacts are identified in **Section 2.3.2**, which would minimize significant effects to migratory bird collisions. Therefore, implementation of Alternative E would not contribute to adverse cumulative effects associated with nighttime lighting.

Wetlands and/or Waters of the U.S.

As discussed in **Section 4.5**, implementation of Alternative E, after mitigation, would not result in adverse effects to Waters of the U.S. The Tormey Drain, seasonal wetland, and drainages occur on the southern portion of the site, discussed in **Section 3.5.4**. The Tormey Drain originates in the west-central part of the Anderson Site and drains to the Sacramento River, and is also identified by the United States Geological Survey (USGS) as an unnamed blue-line stream. The Tormey Drain will be avoided by project design. Indirect impacts to the Tormey Drain and impacts to potential wetlands and Waters of the U.S. would be reduced to less-than-significant levels with implementation of the mitigation measures

identified in **Section 5.2** and **Section 5.5.3**, which include a SWPPP and permitting. Other proposed projects would likewise be required to implement similar measures to mitigate impacts to wetlands and Waters of the U.S, pursuant to Section 404 of the CWA. Therefore, with the implementation of the mitigation measures in **Section 5.5**, Alternative E would not contribute to adverse cumulative effects to wetlands and Waters of the U.S.

Cultural Resources

As described in **Section 3.6**, archaeological investigations failed to identify any cultural resources associated with the development of Alternative E. Approved projects would be required to follow federal, state, and local regulations regarding cultural resources and inadvertent discoveries of cultural resources. All other cumulative projects would be required to avoid or mitigate for impacts to cultural resources in compliance with local, State, and federal law. Therefore, with the implementation of the mitigation measures outlined in **Section 5.6**, Alternative E would not result in adverse cumulative effects to cultural resources.

Socioeconomic Conditions

Cumulative socioeconomic effects could occur in the future in the project area as the result of Alternative E that affect the lifestyle and economic wellbeing of residents. Alternative E would introduce new economic activity to the City of Anderson and the County, which is a beneficial effect to the region. When considered with the buildout of the City and County General Plans, Alternative E may contribute towards cumulative socioeconomic effects including impacts to the local labor market, housing availability, increased costs due to problem gambling, and impacts to local government. These effects would occur as the region's economic and demographic characteristics change, as the population grows, and as specific industries expand or contract. Planning documents will continue to designate land uses for businesses, industry, and housing, as well as plan public services for anticipated growth in the region. Therefore, Alternative E would have a less-than-significant cumulative effect with mitigation on socioeconomic conditions.

Transportation

Table 31 in **Appendix F** provide intersection LOS in 2040 under Alternative E during weekday and weekend PM peak hours. As indicated in Table 31, the following study intersections are projected to operate at unacceptable LOS under Alternative E cumulative conditions:

- North Street / Oak Street (Friday and Saturday PM);
- North Street / I-5 SB Off-Ramp (Friday and Saturday PM);
- North Street / McMurray Drive/I-5 NB On Ramp (Friday PM); and
- Balls Ferry Road / Oak Street (Friday PM).

Table 35 in **Appendix F** provides roadway segment LOS in 2040 under Alternative E. As shown in the table, all study roadway segments are projected to operate at acceptable LOS under Alternative E cumulative conditions. Impacts to roadway segments would be less than significant.

Table 42 in **Appendix F** provides freeway segment LOS for Alternative E under cumulative conditions. As shown in the table, all freeway segments would operate at acceptable LOS with the addition of traffic from Alternative A. Impacts to freeway segments would be less than significant.

As shown in the referenced tables, Alternative E traffic would add to traffic volumes at study intersections, roadway segments, and freeway ramps, causing some of these locations to operate at unacceptable LOS. Significant congestion is expected with and without the project in 2040. Mitigation measures, including pro rata shares, are included in **Section 5.8** to reduce these impacts. With implementation of these measures, all study locations would operate at acceptable LOS with the addition of traffic from Alternative E; therefore, impacts would be less than significant.

Transit, Bicycle, and Pedestrian Facilities

The City of Anderson Bicycle Transportation Plan and the Shasta County Bikeway Plan include maps of future planned bicycle routes in the vicinity of the Anderson Site, including Class II bike paths along all arterial and collector streets, SR-273, North Street, East Street, Ventura Street, McMurray Drive, and Balls Ferry Road. Alternative E would not disrupt or impede upon any of the planned bicycle paths.

Alternative E would include the addition of limited pedestrian-oriented walkways for internal circulation between different land uses. There would be sufficient parking available for patrons and employees, and existing transit services would continue to operate regardless of the proposed project. Therefore, Alternative E would have a less-than-significant impact on transit, bicycle, and pedestrian facilities in the vicinity of the Anderson Site.

Land Use

Development in the City of Anderson is guided in part by the General Plans and Zoning Ordinances. Planned development projects within the City of Anderson are consistent with these documents and policies, which prevent disorderly growth or incompatible land uses. While Alternative E would not be subject to local land use policies, as discussed in **Section 4.9**, Alternative E would be developed in a way that is generally consistent with the City municipal code. Alternative E would not disrupt neighboring land uses, prohibit access to neighboring parcels, or otherwise conflict with neighboring land uses. Therefore, Alternative E would not result in adverse cumulative effects to land use planning.

Agriculture

The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Although the Anderson Site is currently unused, it is

zoned for residential development in the Anderson General Plan. Additionally, an FCIR for was completed for the Anderson Site; the site received a combined land evaluation and site assessment score of 23, which is under the 160-point threshold for evaluation of alternative sites. This FCIR score, along with the location of the Anderson Site within the City of Anderson and not adjacent to agricultural areas, implementation of Alternative E would not contribute to significant cumulative adverse effects to agricultural lands.

Public Services

Water Supply

Alternative E would receive its domestic water supply from either connections to the City of Anderson's municipal water system infrastructure (Water Supply Option 1) or development of on-site groundwater wells (Water Supply Option 2); refer to **Section 4.10.5**. The City of Anderson's sole municipal water supply source is groundwater from the Redding Groundwater Basin, which is not in a state of overdraft. According to the City of Anderson's 2015 Urban Water Management report, the storage capabilities of the Redding Groundwater Basin, along with prudent basin management will allow the City of Anderson to meet its future water demands (City of Anderson, 2015a). The City of Anderson's 10 municipal supply groundwater wells have a combined capacity of 10,700 AFY and in 2040 combined demand is anticipated to be less than 3,000 AFY (City of Anderson, 2015a). As such, the City of Anderson water supply system has the capacity for future growth, including Alternative E Water Supply Option 1. Projects approved for connection to the City of Anderson's water system would pay the appropriate water capital connection charges and monthly service fees. The corresponding fee structure would allow the City of Anderson to expand and maintain its water supply infrastructure as necessary. With the implementation of mitigation measures outlined in **Section 5.10**, Alternative E would not result in significant cumulative effects to the City of Anderson's water supply system. No municipal water systems would be affected by Water Supply Option 2 as no connections are proposed. Potential cumulative impacts to groundwater are discussed above in *Water Resources*. Therefore, implementation of Alternative E Water Supply Option 2 would have no cumulative adverse effect on municipal water supply systems.

Wastewater

Under Alternative E, on-site wastewater treatment is not feasible due to the lack of suitable or available land (**Section 4.10.5**). Therefore, wastewater treatment would be provided by the City of Anderson via connection to the City's conveyance system and the Anderson Water Pollution Control Plant (Anderson WWTP). Alternative E has a projected daily wastewater generation of approximately 203,800 gpd (**Appendix B**, Table 4) and the Anderson WWTP has dry weather flow capacity of 2.0 MGD and a wet weather flow capacity of 6.0 MGD. The City of Anderson Sewer System Report described plans to methodically upgrade the sewer collection system through buildout conditions (City of Anderson, 2009). Any other potential future upgrades to and expansion of infrastructure, when warranted, would be funded through rates charged to customers, and contributions paid by developers. The Tribe would pay the appropriate connection charges and monthly service fees, as would new development, including the

cumulative projects listed above. Mitigation is included in **Section 5.10** to address the possibility of a municipal sewer connection. With implementation of mitigation, Alternative E would not result in significant cumulative effects to the City of Anderson's wastewater system.

Solid Waste

Solid waste service to the Anderson Site would be provided by Waste Management, and solid waste from the site would be taken to the Anderson Landfill. Daily solid waste from Alternative E would represent approximately 0.002 percent of the daily capacity of the Anderson Landfill. Due to the similarities in size and design of Alternative A, cumulative solid waste impacts described under Alternative A would be the same under Alternative E. Further, new development, including the cumulative projects listed above, would pay appropriate monthly service fees, allowing for maintenance and expansion of the landfill, as needed. As capacity at the Anderson Landfill is available for cumulative growth, no significant cumulative effects to solid waste services would occur.

Law Enforcement

New development, including the cumulative projects listed above, would fund in part City of Anderson services including law enforcement through development fees and property tax. As discussed in **Section 3.10.4**, under subheading *Anderson Site Setting*, law enforcement services would be provided by the Anderson Police Department (APD). A Tribal security force would provide security patrol and monitoring needs of the casino as needed. The APD may need additional facilities and equipment to meet the increased need for services due to cumulative growth in the region, including Alternative E. Due to the potential for an increase in calls for service during operation of Alternative E, a potentially significant adverse effect could occur. Additionally, an increase in service demands to the CHP may result from development of Alternative E. However, payments to the State under the Tribal-State Compact would offset any impacts to the CHP.

With implementation of the on-site security measures and the conditions of a service agreement between the Tribe and the City of Anderson, as discussed in **Section 5.10**, payments by the Tribe would compensate the City of Anderson for costs of impacts associated with increased law enforcement services at the Anderson Site. Therefore, with mitigation, Alternative E would result in a less-than-significant cumulative effect on public law enforcement services.

Fire Protection and Emergency Medical Services

New development, including the cumulative projects listed above, would be required to fund City of Anderson services including fire protection and emergency medical response in part through development fees and property taxes. Emergency medical costs are paid primarily by the individual requiring service. Due to the potential for an increase in calls for fire protection services during operation of Alternative E, a potentially significant impact to the Anderson Fire Department (AFD) would occur. With implementation of a service agreement between the Tribe and AFD, as discussed in **Section 5.10**,

payments by the Tribe would compensate AFD for costs of impacts associated with increased fire protection services at the Anderson Site. Therefore, with implementation of mitigation, Alternative E would result in a less-than-significant cumulative impact on public fire protection services.

Mercy Medical Center, AMR, and the Shasta Regional Medical Center, and AMR (described in **Section 4.10.1**, above) are approximately 9.1 miles, 9.4 miles, and 9.7 miles north of the Anderson Site, respectively. As described in **Section 4.10**, the two emergency rooms have sufficient capacity to accommodate projected cumulative growth in the region. Mitigation in **Section 5.10** includes a measure for the Tribe to enter into a service agreement to reimburse the City of Anderson for additional demands created by Alternative E. With this mitigation, Alternative E would not result in a significant cumulative effect on emergency medical services.

Electricity and Natural Gas

Individual projects, including cumulative projects listed within **Section 4.15.2**, would be responsible for paying development or user fees to receive electrical and natural gas services. As such, the Tribe would pay a fair share of the upgrades needed to avoid affecting the service of existing customers and any infrastructure necessary to provide service to Alternative E. It is anticipated that PG&E has sufficient electrical and natural gas capacity to serve Alternative E and cumulative growth (**Section 4.10**; Perez, 2017). Alternative E would not cause significant cumulative effects to energy or natural gas providers.

Noise

Traffic Noise

Noise level measurements were collected along representative off-site roadways that would experience an increase in traffic as result of the project. Increases in noise levels resulting from the addition of project traffic were quantified using the baseline cumulative year (2040) weekday PM peak hour traffic volumes and the cumulative year plus project weekday PM peak hour traffic volumes from the traffic impact analysis included as **Appendix F**. The change in cumulative traffic volumes and the resulting change in ambient noise levels relative to the cumulative year baseline near the closest sensitive receptors to roadways that would experience the largest increase in project-related traffic are shown in **Table 4.15-24**. While the increases in traffic on the three segments of Oak Street would cause audible changes in the ambient noise level (3.0 dBA), the resulting noise levels on all segments would be below the NAC standard (67 dBA Leq) with the addition of project traffic. Therefore, traffic associated with Alternative E would not contribute to any significant cumulative effects to noise-sensitive receptors, and no mitigation is required.

Vibration and Other Noise Sources

The potential for cumulative impacts associated with vibration and other noise sources from Alternative E would be the same as the direct effects of the project described in **Section 4.11**. Noise and vibration associated with the construction of cumulative projects could contribute to significant impacts on nearby

sensitive receptors. Noise and vibration impacts from Alternative E would be reduced to less-than-significant levels through the BMPs provided in **Section 2.3.2**, and it is reasonably assumed that similar BMPs would be employed for cumulative projects to reduce noise and vibration impacts.

TABLE 4.15-24
CUMULATIVE YEAR (2040) TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE E

Roadway Segment	Cumulative Year (2040)		Cumulative Year (2040) Plus Alternative E			
	Friday Peak Hour	dBA Leq	Friday Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
Oak Street north of North Street	131	55.7	1,251	65.5	9.8	Yes
Oak Street between North Street and South Street	51	55.8	341	64.1	8.3	Yes
Oak Street between South Street and Balls Ferry Road	57	56.9	327	64.5	7.6	Yes
North Street between SB I-5 off-ramp and Oak Street	1,070	63.3	1,641	65.2	1.9	No
North Street between SR-273 and Oak Street	921	56.9	1,181	58.0	1.1	No

Source: **Appendix F, Appendix G.**

Hazardous Materials

Cumulative effects associated with hazardous materials resulting from Alternative E would be similar to those under the Proposed Project (refer to **Section 4.15.3**). With the implementation of BMPs outlined in **Section 2.3.2**, Alternative E would not result in significant cumulative impacts to hazardous materials management.

Aesthetics

New development, including cumulative projects listed in **Section 4.15.2** would be consistent with local land use regulations, including associated design guidelines. Cumulative effects would include a shift from open, undeveloped lots to views of developed areas, as well as an increase in the density of urban uses within the City of Anderson and the County. Alternative E would not be out of character with typical roadside development near I-5, nor would it impede views of scenic resources. With the incorporation of design features outlined in **Section 2.3.2**, Alternative E would not result in significant adverse cumulative impacts to aesthetic resources.

4.15.8 ALTERNATIVE F – EXPANSION OF EXISTING CASINO ALTERNATIVE

Geology and Soils

Major changes to topography are not proposed under Alternative E, as the Win-River Casino Site is currently paved. No significant cumulative impacts in this area are anticipated. All other development

that disturbs one acre or more must comply with the requirements of the NPDES Construction General Permit, which requires that BMPs be implemented to address water quality degradation by preventing erosion, as outlined in **Section 5.2**. Therefore, implementation of Alternative F would not result in significant cumulative effects to geology or soils.

Water Resources

Surface Water and Flooding

As described in **Section 4.3**, the Win-River Casino Site is fully developed, and expansion of the existing facilities under Alternative F would involve the addition of a negligible amount of impervious surfaces. Because of this, development under Alternative F would not cause or require significant adjustments to the existing stormwater drainage pattern. As described in **Section 4.3** and **Appendix B**, water would continue to be supplied to the Win-River Casino Site via the City's municipal water system under Alternative F. The projected increase in potable water consumption under Alternative F (approximately 4,000 gpd in average day demand) would be insignificant relative to both the existing demand on the system and the additional consumption that would occur under Alternatives A through D, Water Supply Option 1. Thus, Alternative F would not contribute to any cumulatively significant impacts related to surface water and flooding.

Water Quality

Concurrent construction of Alternative F and other cumulative projects identified above could result in cumulative effects to water quality similar to those identified above for Alternatives A through D. Because the Win-River Casino Site is already developed, water quality impacts related to erosion and earth-disturbing activities are likely to be significantly reduced under Alternative F relative to previous alternatives. With the implementation of the measures identified in **Section 5.2**, Alternative F would not contribute to a significant cumulative impact to water quality.

Groundwater Supply

As stated in **Section 4.3**, Alternative F would not involve the drilling of any new groundwater wells. However, as stated above, potable water would continue to be supplied to the Win-River Casino Site by the City, which derives approximately 22.2 percent of its total water capacity from groundwater resources. The increased potable water demand under Alternative F would be insignificant relative to both the existing demand placed on the City's water supply system and to the total amount of water that the City annually pumps from the Redding Groundwater Basin (refer to **Section 4.3**). Furthermore, as described in **Section 3.3**, the Redding Groundwater Basin is not in a state of overdraft; it has historically exhibited resilience to drought conditions, and water levels in the Basin have not fluctuated dramatically over time. Thus, Alternative F would not cause a significant cumulative effect to regional groundwater levels.

Groundwater Quality

As described in **Section 4.3**, development of Alternative F would occur almost exclusively on surfaces that area already graded and paved, and would therefore not add a significant amount of new impervious surfaces to the Win-River Casino Site. Additionally, the impacts of fertilizer application on groundwater quality would be insignificant due to the minimal landscaped area of the Win-River Casino Site under Alternative F. Therefore, with the implementation of the measures provided in **Section 5.2**, Alternative F would not result in a significant cumulative effect to groundwater quality.

Air Quality

Operational Emissions

Cumulative operation of Alternative F would be similar to Alternative A; however, on a much smaller scale. The cumulative year unmitigated 2040 operational emissions for Alternative F are provided in **Table 4.15-25**. CalEEMod output files are included in **Appendix I**.

TABLE 4.15-25
ALTERNATIVE F UNMITIGATED 2040 OPERATIONAL EMISSIONS

Sources	Criteria Pollutants					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	tons per year					
Area	0.14	0.00	0.02	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.37	3.74	2.13	0.01	0.32	0.09
Total Emissions	0.51	3.74	2.15	0.01	0.32	0.09
<i>De Minimis Levels</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Exceed Levels	N/A	N/A	N/A	N/A	N/A	N/A
Notes: N/A = Not Applicable; levels are not applicable due to attainment status (refer to Section 3.4). Source: CalEEMod, 2016; AES, 2018.						

For information about the region's attainment status and potential for regional air quality impacts, refer to **Section 4.15.3**. Due to the region's attainment status, general conformity *de minimis* levels are not applicable for these pollutants and a general conformity determination is not required. Alternative E would not cumulatively adversely impact the region's air quality.

CO Hot Spots Analysis

No CO Hot Spots Analysis was performed because no intersection under Alternative F would degrade from LOS A, B, or C to LOS D, E, or F.

Climate Change

The climate change analysis methodology for Alternative F is the same as Alternative A; however on a much smaller scale. **Table 4.15-26** estimates Alternative F construction GHG emissions at 346.61 MT of

CO₂e per year and operational emissions of 2,485.08 MT of CO₂e per year. The total project-related GHG emissions estimate was calculated by amortizing construction emissions of approximately 519.92 MT of CO₂ over 1.5 years and adding them to operational emissions.

TABLE 4.15-26
PROJECT-RELATED ANNUAL GHG EMISSIONS – ALTERNATIVE F

Emission Source	GHG Emissions in MT CO ₂ e
Construction	
Construction ¹	454.91
Operational	
Area	0.03
Mobile (Vehicle Trips)	2,227.57
Electricity Usage	0.70
Solid Waste	29.17
Water/Wastewater	55.40
<i>Operation Subtotal</i>	<i>2,312.87</i>
Total Project-Related GHG Emissions	2,767.78
Notes: 1 - Construction-related GHG emissions were amortized over the construction period to determine annual construction emissions. Source: CalEEMod, 2016; AES, 2018.	

GHG emissions resulting from Alternative F are far less than Alternative A and as stated in Alternative A no characteristic of Alternative A is unique or especially vulnerable to the impacts from climate change. Alternative F would not result in a significant adverse cumulative impact associated with climate change.

Biological Resources

Wildlife and Habitats

As identified in **Section 3.5**, habitats within the Win-River Casino Site have been previously developed, as the site currently houses the Tribe's existing Win-River Casino facility. As identified in **Section 4.5**, there are no high-value habitats on the Win-River Casino Site. The site is entirely paved and landscaped with ornamental plants and ruderal species, and provides limited resources for wildlife. No designated critical habitat or EFH occur within or adjacent to the Win-River Casino Site. No significant adverse cumulative effects would occur to wildlife habitat.

Federally-Listed Species

As discussed in **Section 3.5**, no federally-listed plant or wildlife species have the potential to occur on the Win-River Casino Site. Implementation of Alternative F would not contribute to adverse cumulative effects to federally-listed species.

Migratory Birds

Cumulative effects of Alternative F on migratory birds will be similar to those described under Alternative A. The Win-River Casino Site contains very limited nesting habitat for migratory birds. Mitigation measures provided in **Section 5.5.2** would minimize significant effects to migratory birds. Additionally, other projects in the region would comply with local, state, and federal laws that protect migratory bird species. Therefore, implementation of Alternative F would not result in significant cumulative effects to nesting migratory birds.

Wetlands and/or Waters of the U.S.

As discussed in **Section 4.5**, Alternative F would not result in adverse effects to wetlands or Waters of the U.S. No wetlands or Waters of the U.S. occur within the Win-River Casino Site. Implementation of Alternative F would not contribute to adverse cumulative effects to wetlands or Waters of the U.S.

Cultural Resources

As described in **Section 3.6**, Alternative F would be constructed on previously disturbed surfaces, and impacts to cultural resources are unlikely. However, Alternative F may affect previously unknown buried archaeological resources. Mitigation measures specified in **Section 5.6** would ensure impacts to unanticipated cultural resources. Other projects in the region would be required to follow federal, state, and local regulations regarding cultural resources and inadvertent discoveries of cultural resources. Therefore, with the implementation of the mitigation measures outlined in **Section 5.6**, Alternative F, in addition to other projects in the region, would not result in adverse cumulative effects to cultural resources.

Socioeconomic Conditions

Alternative F would introduce a relatively modest amount of new economic activity into the County (**Section 4.7**). Alternative F's specific potential cumulative effects would be similar in nature, though much lesser in scale, to those described under Alternative A. Refer to **Section 4.7** and **Section 4.15.3** for more information. Alternative F would have a less-than-significant cumulative effect on socioeconomic conditions.

Transportation

Table 32 in **Appendix F** provide intersection LOS in 2040 under Alternative F during weekday and weekend PM peak hours. As indicated in Table 32, all study intersections are projected to operate acceptably under Alternative F cumulative conditions.

Tables 35 and 36 in **Appendix F** provides roadway segment LOS in 2040 under Alternative F. As shown in the tables, all study roadway segments are projected to operate at acceptable LOS under Alternative F cumulative conditions. Impacts to roadway segments would be less than significant.

As shown in the referenced tables, Alternative F traffic would add to traffic volumes at study intersections and roadway segments; however, Alternative F would not cause any of these locations to operate at unacceptable LOS. Impacts would be less than significant.

Transit, Bicycle, and Pedestrian Facilities

Because sufficient parking would be available on site and sidewalk and bicycle facilities on the Win-River Casino Site would not be affected by Alternative F, no significant cumulative effects would occur to pedestrian or bicycle facilities as a result of Alternative F. No cumulative impacts to transit are anticipated.

Land Use

Alternative F would be constructed on developed land held in trust for the Tribe. This land is not subject to local planning documents. Additionally, the use of the Win-River Casino Site would not be modified under Alternative F. No agricultural operations exist on site, and Alternative F would not disrupt neighboring land uses. Therefore, implementation of Alternative F would not contribute to significant cumulative adverse effects associated with land use conflicts or agriculture.

Public Services

Water Supply

Municipal water service to the Win-River Casino is provided by the City pursuant to a Master Service Agreement signed in September 2012. The Tribe maintains an internal water supply system to provide for domestic and fire flows, and is responsible for any required upgrades to the system. Alternative F would cause an average annual day water usage and average summer day water usage increase of 4,000 gpd and 6,000 gpd, respectively. Projects approved for connection to the City's water system would pay the appropriate water capital connection charges and monthly service fees. The corresponding fee structure would allow the City to expand its water supply infrastructure in the future if necessary. Mitigation provided in **Section 5.10.1** would ensure that Alternative F would not result in significant cumulative effects to water supply services.

Wastewater

The Win-River Casino Site currently receives public wastewater services from the City pursuant to a Master Service Agreement signed in September 2012. The City would continue to provide wastewater service for Alternative F and the Tribe would continue to pay the appropriate connection charges and monthly service fees, consistent with any other commercial development. The West Side Interceptor is currently at capacity; however, the City's proposed interceptor expansion in 2022, will sufficiently increase capacity to serve Alternative F and other new developments (Bailey, 2017). As capacity will be available for cumulative growth including Alternative F and through the implementation of mitigation provided in **Section 5.10.1**, no significant cumulative effects to wastewater services would occur.

Solid Waste

As described in **Section 3.10**, the existing Win-River Casino Site is currently outside the City limits, and therefore outside the service boundaries of the City of Redding's Solid Waste Utility. Solid waste service is currently provided to the Win-River Casino Site by Waste Management. Win-River Casino is served by the same landfill as Alternatives A through E. Thus, cumulative effects to solid waste services under Alternative F are similar to those described under **Section 4.15.3**. Since there is adequate capacity at the Anderson Landfill to accommodate cumulative growth including Alternative F, no significant cumulative effects to solid waste services would occur.

Law Enforcement

As described in **Section 4.10.6**, law enforcement services would continue to be provided to the Win-River Casino Site by the SCSO and the RPD, while prosecution and court and jail services would be provided by the SCSO. New development, including projects listed within **Section 4.15.2**, would fund County and City public services, including law enforcement services, through development fees and property taxes. Alternative F would not result in a significantly increased number of calls for service and no additional facilities or equipment would be needed to provide service to Alternative F. Therefore, Alternative F would result in a less-than-significant cumulative effect to law enforcement services.

Fire Protection and Emergency Medical Services

Fire protection and emergency medical services would continue to be provided to the Win-River Casino Site by the RFD, SCFD, and California Department of Fire and Forestry (CAL FIRE). The SCFD would continue to provide first responder emergency medical service through paramedic staffing on ambulances and engines. New development, including projects listed within **Section 4.15.2**, would be required to fund County and City services including fire protection and emergency medical response through development fees and property taxes. Emergency medical costs are paid primarily by the individual requiring service. Alternative F is not anticipated to result in a significant increase in calls for service. However, as described in **Section 5.10.4**, the Tribe would renegotiate its agreements to reimburse SCFD for quantifiable direct and indirect costs incurred in conjunction with providing increased fire and emergency services. Thus, implementation of Alternative F would result in a less-than-significant cumulative impact to fire protection and emergency medical services.

Electricity and Natural Gas

Individual projects, including all of the projects listed within **Section 4.15.2**, would be responsible for paying development or user fees to receive electrical and natural gas services. Due to the likely relatively small increase in electricity demand associated with the expansion of Win-River Casino and the fact that REU already provides electrical services to the Win-River Casino Site, it is anticipated that REU would have sufficient infrastructure and capacity to accommodate Alternative F (**Section 4.10**). Additionally REU has indicated that their utility system is sufficiently robust to handle cumulative growth, as the City's demand has gone down in recent years (Ross, 2017). However, the Tribe would pay a fair share of

the upgrades needed to avoid affecting the service of existing customers and to provide adequate distribution infrastructure in the event that improvements are required. Therefore, implementation of Alternative F would not cause significant cumulative effects to electricity or natural gas providers.

Noise

Traffic Noise

Noise level measurements were collected along representative off-site roadways that would experience an increase in traffic as result of the project. Increases in noise levels resulting from the addition of project traffic were quantified using the baseline cumulative year (2040) weekday PM peak hour traffic volumes and the cumulative year plus project weekday PM peak hour traffic volumes from the traffic impact analysis included as **Appendix F**. The change in cumulative traffic volumes and the resulting change in ambient noise levels relative to the cumulative year baseline near the closest sensitive receptors to roadways that would experience the largest increase in project-related traffic are shown in **Table 4.15-27**. No road segments would experience an increase in the ambient noise level above the NAC standard of 67 dBA Leq with the addition of project traffic. Therefore, traffic associated with Alternative F would not contribute to any significant cumulative effects to noise-sensitive receptors, and no mitigation is required.

TABLE 4.15-27
CUMULATIVE YEAR (2040) TRAFFIC VOLUMES AND AMBIENT NOISE LEVELS – ALTERNATIVE F

Roadway Segment	Cumulative Year (2040)		Cumulative Year (2040) Plus Alternative F			
	Friday Peak Hour	dBA Leq	Friday Peak Hour	dBA Leq	Change (dBA Leq)	Audible Increase?
SR-273 north of Redding Rancheria Road	1,978	62.3	1,892	62.1	-0.2	No
SR-273 south of Redding Rancheria Road	1,392	62.9	1,196	62.2	-0.7	No
Redding Rancheria Road between SR-273 and Canyon Road	947	55.1	1,043	55.5	0.4	No
Redding Rancheria Road west of Canyon Road	372	55.1	490	56.3	1.2	No

Notes:

1 - Ambient noise levels near SR-273 are conservative assumptions based on the recorded sound levels at Site E (refer to **Table 3.11-6**), which was located a similar distance from a road (South Bonnyview Road) with a comparable but somewhat higher traffic volume than SR-273

2 - Refer to *Construction Traffic* above

Source: **Appendix F**; **Appendix G**; The Engineering Toolbox, 2017.

Vibration and Other Noise Sources

The potential for cumulative impacts associated with vibration and other noise sources from Alternative F would be the same as the direct effects of the project described in **Section 4.11**. Noise and vibration associated with the construction of cumulative projects could contribute to significant impacts on nearby sensitive receptors. Noise and vibration impacts from Alternative F would be reduced to less-than-

significant levels through the BMPs provided in **Section 2.3.2**, and it is reasonably assumed that similar BMPs would be employed for cumulative projects to reduce noise and vibration impacts.

Hazardous Materials

As discussed in **Section 4.12**, with the incorporation of the BMPs outlined in **Section 2.3.2**, implementation of Alternative F would not result in direct effects associated with hazardous materials management. Approved projects, including those previously listed, would be required to follow applicable federal and state regulations concerning hazardous materials management, including the implementation of construction BMPs dealing with hazardous materials management through the NPDES permitting process. With the implementation of BMPs outlined in **Section 2.3.2**, Alternative F, in combination with other projects, would not result in significant cumulative effects associated with hazardous materials.

Aesthetics

New development, including the cumulative projects listed above, would be consistent with local applicable policies and regulations, including associated design guidelines. Cumulative effects would include the alteration of the colors, lines, and texture of the landscape vegetation currently on site. The site-specific visual effects would not be significant, as the resulting product would look very similar to the existing setting. Additionally, with the implementation of design features outlined in **Section 2.3.2**, Alternative F would not result in adverse cumulative impacts to aesthetic resources.

4.15.9 ALTERNATIVE G – NO ACTION ALTERNATIVE

Under Alternative G, the No Action Alternative, development of the Strawberry Fields and Anderson Sites are not reasonably foreseeable and current land uses would continue. No changes would occur at the Win-River Casino Site. None of the adverse or beneficial effects identified for Alternatives A through F are anticipated to occur. Therefore, Alternative G would not result in any significant cumulative effects.