

Shingle Springs Band of Miwok Indians

DRAFT TRIBAL ENVIRONMENTAL IMPACT REPORT

Entertainment Center Project

Lead Agency

Shingle Springs Band of Miwok Indians

June 2021

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Executive Summary

Entertainment Center Project

ES.1 BACKGROUND

This Tribal Environmental Impact Report (TEIR) has been prepared by the Shingle Springs Band of Miwok Indians (Tribe) to assess the potential off-reservation impacts of the Tribe's proposed entertainment center project (Project). The proposed entertainment center would be located at the existing Red Hawk Casino on the Shingle Springs Rancheria (Rancheria or Reservation) in El Dorado County, California. The TEIR has been developed in accordance with the requirements of the Tribal-State Compact (Compact) between the Tribe and the State of California. The Tribe serves as the Lead Agency for the TEIR.

ES.2 SUMMARY DESCRIPTION OF THE PROJECT

The Tribe is proposing to expand its Red Hawk Casino with the addition of a hotel and entertainment center. The existing facility includes a 278,000-square-foot casino and adjacent eight-level parking garage. The hotel project was previously addressed in environmental reviews and is not a subject of this TEIR. The 75,000-square-foot entertainment center would be developed above the northern half of the existing parking garage. The entertainment center building would incorporate additional entertainment and dining options such as a bowling alley, virtual reality gaming suites, indoor go-karting, bar, and meeting rooms. In addition to the entertainment center, this TEIR addresses the expansion of the existing parking garage. The southern half of the existing eight-level parking garage would be expanded with an additional three levels. The additional three levels would expand the number of parking spaces from 3,040 to 3,600.

ES.3 ENVIRONMENTAL PROCESS

Notice of Preparation

The Tribe filed a Notice of Preparation (NOP) of the Draft TEIR on March 20, 2020 in accordance with Section 11.8.2 of the Compact, which is included as **Appendix A**. The NOP was distributed to the California State Clearinghouse (SCH), El Dorado County, resource agencies with off-reservation jurisdiction and other interested parties. The NOP was also published on the Tribe's website (www.shinglespringsrancheria.com) and printed copies were made available to the El Dorado County Planning Department. The NOP was prepared to inform agencies and the general public that a TEIR was being prepared and to invite comments on the scope and content of the document. Comments were accepted for a 30-day period ending on April 20, 2020. Comments received during that time are included in **Appendix B** and summarized in Chapter 5, Agency and Public Comments. The NOP provided a preliminary description of the Project, Project location, and a summary of probable off-reservation environmental impacts.

Draft TEIR

The publication of this Draft TEIR initiates a 45-day public review period. The public review period is identified within the Notice of Completion (NOC) filed with the SCH and may be found on the SCH's CEQANet website (<https://ceqanet.opr.ca.gov/>) filed under SCH Number 2020030870. The NOC and TEIR were also submitted to the California Gambling Control Commission, El Dorado County, the California Department of Justice, and Office of the Attorney General. The NOC and TEIR are also posted on the Tribe's website (www.shinglespringsrancheria.com).

Final TEIR

The Tribe will prepare a Final TEIR which will include all comments received on the Draft TEIR along with responses to comments and the Draft TEIR (including any revisions made to the document). The Tribe will submit the Final TEIR to El Dorado County, SCH, the California Gambling Control Commission, the California Department of Justice, and the Office of the Attorney General.

ES.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This TEIR analysis the potential environmental impacts of the Project. **Table ES-1** (found at the end of this chapter) summarizes all impacts, whether their level of significance was found to be no impact, less-than-significant impact, or significant. For any impacts found to be significant, corresponding mitigation measures are included and the level of significance after mitigation is indicated. The identified mitigation measures are considered to be feasible by the Tribe.

NI=No Impact, LS=Less than Significant, LSM=Less than Significant with Mitigation, S=Significant, NA=Not Applicable

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Environmental Categories with No Significant Impacts			
Agriculture and Forest Resources			
A. Involve changes in the existing environment, which, due to their location or nature, could result in conversion of off-reservation farmland to non-agricultural use or conversion of off-reservation forest land to non-forest use?	NI	None Required.	NA
Cultural Resources			
A. Cause a substantial adverse change in the significance of an off-reservation historical or archeological resource?	NI	None Required.	NA
B. Directly or indirectly destroy a unique off-reservation paleontological resource or site or unique off-reservation geologic feature?	NI	None Required.	NA
C. Disturb any off-reservation human remains, including those interred outside of formal cemeteries?	NI	None Required.	NA
Mineral Resources			
A. Result in the loss of availability of a known off-reservation mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	NI	None Required.	NA
B. Result in the loss of availability of an off-reservation locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	NI	None Required.	NA
Population and Housing			
A. Induce substantial off-reservation population growth?	NI	None Required.	NA
B. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere off-reservation?	NI	None Required.	NA
Recreation			
A. Increase the use of existing off-reservation neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	NI	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Aesthetics			
A. Would the Project have a substantial adverse effect on a scenic vista?	S	Mitigation Measures AES-1: - Trees will be planted on the north side of the parking garage along access roads to provide screening of the development from residential areas north of the Rancheria. - Trees will be planted on the north side of the recycled water tanks to provide screening of the tanks from residential areas north of the Rancheria.	LSM
B. Would the Project substantially damage off-Reservation scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NI	None Required.	NA
C. Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views of historic buildings or views in the area?	LS	None Required.	NA
Air Quality and Greenhouse Emissions			
A. Would the Project conflict with or obstruct implementation of the applicable air quality plan?	S	Mitigation Measure AQ-1: To ensure that the Project's construction emissions remain less than significant, one of the following El Dorado AQMD construction mitigation measures shall be implemented: Require the prime contractor to provide an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum, a fleet-averaged 15 percent NOx reduction compared to the most recent CARB fleet average. Implementation of this measure requires the prime contractor to submit a comprehensive	LSM

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
		inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. In addition, the inventory list shall be updated and submitted monthly throughout the duration of when the construction activity occurs. - Require the prime contractor to use an alternative fuel, other than Diesel, verified by CARB or otherwise documented through emissions testing to have the greatest NOx and PM10 reduction benefit available, provided each pollutant is reduced by at least 15 percent. Mitigation Measure AQ-2: To ensure that the Project's consistency with the 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, one or more measures identified in Appendix E of the El Dorado AQMD's Guide to Air Quality Assessment shall be incorporated into the project design. The measures identified include the following: - Provide bicycle lockers and/or racks. - Provide electric vehicle charging facilities. - Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances. - Install ozone destruction catalyst on air conditioning systems in consultation with El Dorado AQMD. - Install Energy Star labeled roof materials. - Implement Clean Air Business Practices such as using low-emission delivery vehicles, contract	

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
		with alternative-fuel waste hauling companies, etc., in consultation with El Dorado AQMD. • Provide electric shuttle to transit stops. • Other proposed strategies in consultation with El Dorado AQMD.	
B. Would the Project violate any air quality standard or contribute to an existing or projected air quality violation?	S	Mitigation Measure AQ-1 (see above)	LSM
C. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	S	Mitigation Measures AQ-1 and AQ-2 (see above)	LSM
D. Would the Project expose off-Reservation sensitive receptors to substantial pollutant concentrations?	LS	None Required.	NA
E. Would the Project create objectionable odors affecting a substantial number of people off-Reservation?	LS	None Required.	NA
F. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the off-Reservation environment?	S	Mitigation Measure AQ-3: • No natural gas or propane infrastructure shall be included within the proposed entertainment center. • The proposed parking garage addition shall be designed and constructed to meet 2019 CalGreen Tier 2 standards for electric vehicle (EV) charging, except that all EV capable spaces shall be constructed as EV ready spaces. EV ready spaces shall include the installation of dedicated branch circuit(s), circuit breakers, and other electrical components, including a receptacle or blank cover needed to support future installation of one or more charging stations.	LSM
G. Would the Project conflict with any off-Reservation plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	S	Mitigation Measure AQ-3 (see above)	LSM

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Biological Resources			
A. Would the Project have a substantial adverse impact, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	S	Mitigation Measures BIO-1: If construction activities would occur during the nesting season (March to September), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid “take” of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.	LSM
B. Would the Project have a substantial adverse effect on any off-Reservation riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	LS	None Required.	NA
C. Would the Project have a substantial adverse effect on federally protected off-Reservation wetlands as defined by Section 404 of the Clean Water Act?	LS	None Required.	NA
D. Would the Project Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	LS	None Required.	NA
E. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Geology and Soils			
A. Would the Project expose off-Reservation people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?	LS	None Required.	NA
B. Would the Project result in substantial off-Reservation soil erosion or the loss of topsoil?	LS	None Required.	NA
Hazards and Hazardous Materials			
A. Would the Project create a significant hazard to the off-Reservation public or the off-Reservation environment through the routine transport, use, or disposal of hazardous materials?	LS	None Required.	NA
B. Would the Project create a significant hazard to the off-Reservation public or the off-Reservation environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	LS	None Required.	NA
C. Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed off-Reservation school?	LS	None Required.	NA
D. Would the Project expose off-Reservation people or structures to a significant risk of loss, injury or death involving wildland fires?	LS	None Required.	NA
Land Use			
A. Would the Project conflict with any off-Reservation land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	LS	None Required.	NA
B. Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan covering off-Reservation lands?	NI	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Noise			
A. Would the Project expose off-Reservation persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	LS	Mitigation Measure NO-1: To minimize disturbance to adjacent residential land uses, the project contractor shall ensure that the following construction noise BMPs are met on-site during all phases of construction: • All equipment driven by internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed “package” equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise- control features that are readily available for that type of equipment. • All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity. • The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists. • At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences. • Unnecessary idling of internal combustion engines shall be prohibited. • Construction staging areas shall be established at locations that would create the greatest distance	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
		between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible. • Construction site and access road speed limits shall be established and enforced during the construction period. • The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. • Project-related public address or music systems shall not be audible at any adjacent receptor. • Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing. • The construction contractor shall designate a “noise disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.	
B. Would the Project expose off-Reservation persons to excessive groundborne vibration or groundborne noise levels?	LS	None Required.	NA
C. Would the Project result in a substantial permanent increase in ambient noise levels in the off-Reservation vicinity of the project?	LS	None Required.	NA
D. Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the off-Reservation vicinity of the project?	LS	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
Public Services			
A. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for off-Reservation fire protection and emergency medical services?	LS	None Required.	NA
B. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for off-Reservation police protection?	LS	None Required.	NA
C. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for off-Reservation schools?	LS	None Required.	NA
D. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for off-Reservation parks or other public facilities?	LS	None Required.	NA
Transportation and Traffic			
A. Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-Reservation circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	LS	None Required.	NA
B. Would the Project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel	NI	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
demand measures, or other standards established by the county congestion management agency for designated off-Reservation roads or highways?			
C. Would the Project substantially increase hazards to an off-Reservation design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	LS	None Required.	NA
D. Would the Project result in inadequate emergency access for off-Reservation responders?	LS	None Required.	NA
Utilities and Service Systems			
A. Would the Project exceed off-Reservation wastewater treatment requirements of the applicable Regional Water Quality Control Board?	NI	None Required.	NA
B. Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant off-Reservation environmental effects	LS	None Required.	NA
C. Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant off-Reservation environmental effects?	NI	None Required.	NA
D. Would the Project result in a determination by an off-Reservation wastewater treatment provider (if applicable), which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	NI	None Required.	NA
Water Resources			
A. Would the Project violate any water quality standards or waste discharge requirements?	LS	None Required.	NA
B. Would the Project substantially deplete off-Reservation groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	LS	None Required.	NA

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Impact	Significance Before Mitigation	Mitigation Measure	Residual Impact
C. Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation off-site?	LS	None Required.	NA
D. Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?	LS	None Required.	NA
E. Would the Project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff off-Reservation?	LS	None Required.	NA
F. Would the Project place within a 100-year flood hazard area structures, which would impede or redirect off-Reservation flood flows?	NI	None Required.	NA
G. Would the Project expose off-Reservation people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	NI	None Required.	NA
Growth-Inducing Impacts			
Would the Project directly or indirectly induce growth in the surrounding area?	LTS	None Required.	NA
Cumulative Impact	Significant Contribution?	Additional Mitigation Measures	Residual Impact
Aesthetics	No	None Required.	NA
Air Quality and Greenhouse Emissions	No	None Required.	NA
Biological Resources	No	None Required.	NA
Geology and Soils	No	None Required.	NA
Hazards and Hazardous Materials	No	None Required.	NA
Land Use	No	None Required.	NA
Noise	No	None Required.	NA
Public Services	No	None Required.	NA
Transportation and Traffic	No	None Required.	NA
Utilities and Service Systems	No	None Required.	NA
Water Resources	No	None Required.	NA

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Chapter 1

INTRODUCTION

1.1 INTRODUCTION

This Tribal Environmental Impact Report (TEIR) has been prepared by the Shingle Springs Band of Miwok Indians (Tribe) to assess the potential off-reservation impacts of the Tribe's proposed entertainment center project (Project). The proposed entertainment center would be located at the existing Red Hawk Casino on the Shingle Springs Rancheria (Rancheria or Reservation) in El Dorado County, California. The TEIR has been developed in accordance with the requirements of the Tribal-State Compact (Compact) between the Tribe and the State of California. The Tribe serves as the Lead Agency for the TEIR.

1.2 PROJECT BACKGROUND

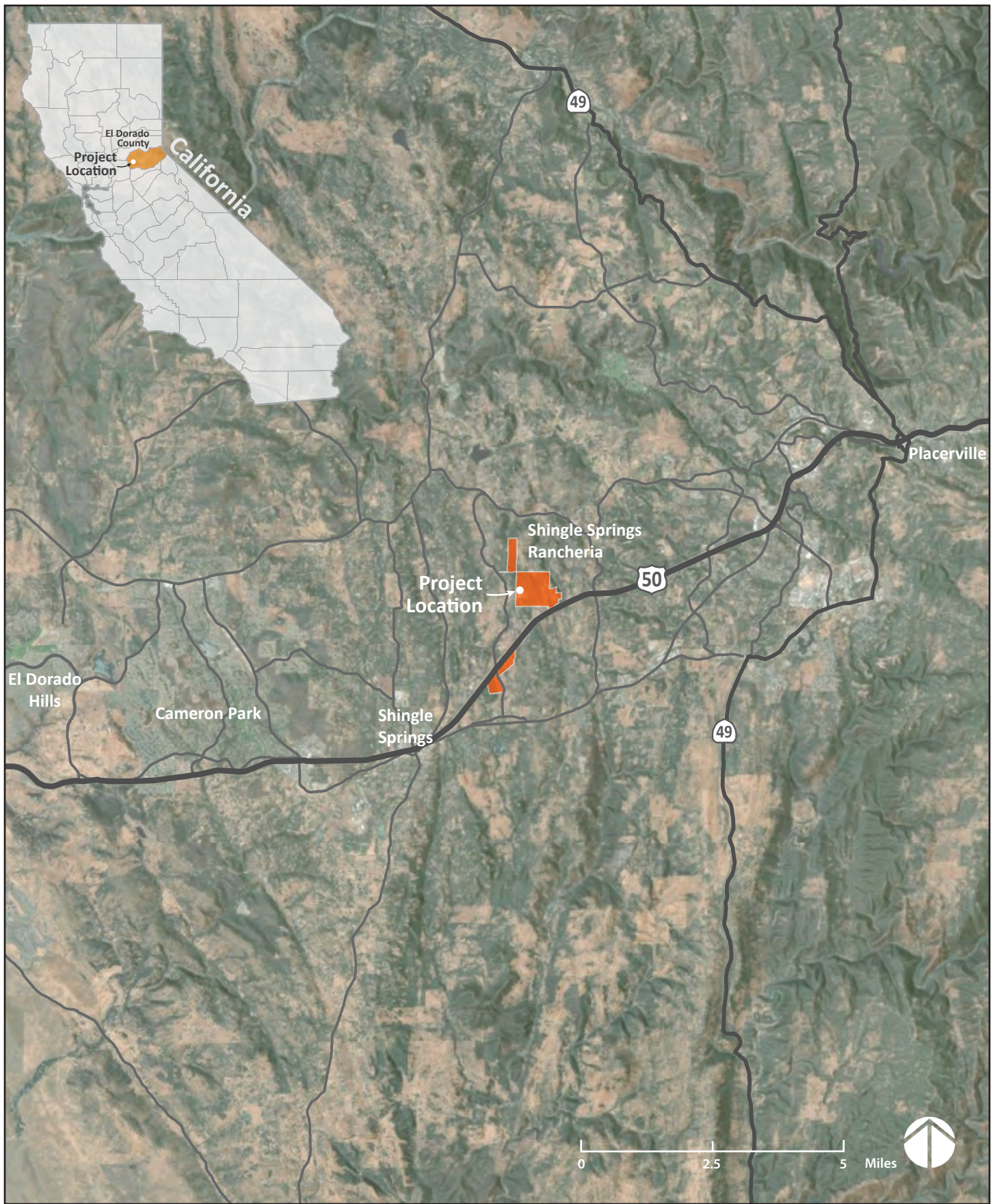
The Tribe is currently planning expansion of its Red Hawk Casino, which opened in 2008. The proposed expansion includes the construction of a hotel and an entertainment center. Hotel development was identified, evaluated, and approved in connection with the Final Environmental Assessment and Findings of No Significant Impact previously prepared by the National Indian Gaming Commission and Bureau of Indian Affairs in compliance with the National Environmental Policy Act. Therefore, consistent with the Compact and the Memorandum of Understanding and Intergovernmental Agreement Between the County of El Dorado and the Tribe, the hotel component has already been subjected to environmental review and is not addressed as part of the Project evaluated in this TEIR. The proposed entertainment center and associated facilities (described in detail in Section 2.3), which were not addressed in the Final Environmental Assessment and Findings of No Significant Impact, are the subject of this TEIR.

1.3 PROJECT LOCATION

The Project is located on the Shingle Springs Rancheria within an unincorporated portion of El Dorado County approximately two miles northeast of the community of Shingle Springs (**Figure 1-1**). The proposed facilities would expand the Tribe's existing Red Hawk Casino, which is located on Red Hawk Parkway off Highway 50.

1.4 ENVIRONMENTAL PROCESS

This TEIR has been prepared in compliance with Section 11.0 of the Compact, which requires the Tribe to prepare a TEIR for any project that is related to the Tribe's gaming operation and may cause either a direct physical change in the off-reservation environment or a reasonably foreseeable indirect physical change in the off-reservation environment.



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 1-1
REGIONAL LOCATION

Notice of Preparation

The Tribe filed a Notice of Preparation (NOP) of the Draft TEIR on March 20, 2020 in accordance with Section 11.8.2 of the Compact, which is included as **Appendix A**. The NOP was distributed to the California State Clearinghouse (SCH), El Dorado County, resource agencies with off-reservation jurisdiction and other interested parties. The NOP was also published on the Tribe's website (www.shinglespringsrancheria.com) and printed copies were made available to the El Dorado County Planning Department. The NOP was prepared to inform agencies and the general public that a TEIR was being prepared and to invite comments on the scope and content of the document. Comments were accepted for a 30-day period ending on April 20, 2020. Comments received during that time are included in **Appendix B** and summarized in Chapter 5, Agency and Public Comments. The NOP provided a preliminary description of the Project, Project location, and a summary of probable off-reservation environmental impacts.

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The publication of this Draft TEIR initiates a 45-day public review period. The public review period is identified within the Notice of Completion (NOC) filed with the SCH and may be found on the SCH's CEQANet website (<https://ceqanet.opr.ca.gov/>) filed under SCH Number 2020030870. The NOC and TEIR were also submitted to the California Gambling Control Commission, El Dorado County, the California Department of Justice, and Office of the Attorney General. The NOC and TEIR are also posted on the Tribe's website (www.shinglespringsrancheria.com).

Final TEIR

The Tribe will prepare a Final TEIR which will include all comments received on the Draft TEIR along with responses to comments and the Draft TEIR (including any revisions made to the document). The Tribe will submit the Final TEIR to El Dorado County, SCH, the California Gambling Control Commission, the California Department of Justice, and the Office of the Attorney General.

Chapter 2

PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

The Tribe is proposing to expand its Red Hawk Casino with the addition of a hotel and entertainment center. The existing facility includes a 278,000-square-foot casino and adjacent eight-level parking garage. The hotel project was previously addressed in environmental reviews and is not a subject of this TEIR (as discussed in Section 1.2). In addition to the entertainment center, this TEIR addresses the expansion of the existing parking garage.

2.2 PROJECT OBJECTIVES

In developing the Project, the Tribe seeks to attain the following objectives:

- Expand visitor experience of the Red Hawk Casino to strengthen and sustain economic development on the Rancheria.
- Provide space for meetings.
- Expand and diversify the economic base for the Tribe to support programs benefitting the health and welfare of Tribal members and the surrounding community.
- Expand employment opportunities for Tribal members and the surrounding community.

2.3 PROJECT ELEMENTS

The Project consists of the development of an entertainment center, expansion of the existing parking garage, and installation of recycled water tanks. These facilities are described below and shown in **Figure 2-1**.

Entertainment Center

An entertainment center would be developed above the northern half of the existing parking garage. The approximately 75,000-square-foot entertainment center would connect to, and be on the same level as, the main floor of the casino. The entertainment center building would incorporate additional entertainment and dining options such as a bowling alley, virtual reality gaming suites, indoor go-karting, bar, and meeting rooms. A mezzanine level would be developed over a portion of the main floor. An architectural rendering is provided in **Figure 2-2**.

Exterior Details

The exterior of the entertainment center would be similar to the existing casino building. The top of the building would be approximately level with the top of the existing casino roof. The exterior walls would be clad with earth tone architectural panels that have horizontal ridges which cast shadows and reduce reflectivity. Windows would be provided along the south and east side of the building.



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 2-1
PROJECT SITE WITH EXISTING AND PROPOSED FACILITIES



View from Southwest



View from Southeast

Exterior lighting would be limited to shielded security lighting consistent with lighting currently provided on the casino.

Patrons would only be able to access the entertainment center through the existing elevator lobby. Emergency exits would be provided at stairwells located at the east side of the building.

Parking Garage Expansion

The southern half of the existing eight-level parking garage would be expanded with an additional three levels. The additional three levels would expand the number of parking spaces from 3,040 to approximately 3,600. The existing parking garage is constructed of steel reinforced concrete and is finished with a natural concrete surface. Security lighting is provided within the interior of the parking garage (including the top floor), within the stairwells on the eastern corners of the garage, and on the exterior walls above walkways. All lighting is shielded to reduce illumination of the surrounding areas. Due to the site topography, the upper level of the existing parking garage is at the elevation of the lower casino level. The additional three levels would raise the elevation of the top floor of the parking garage by approximately 36 feet. At this elevation, the expanded parking garage would be approximately level with the top of the existing casino roof. The expanded parking garage would be accessed from existing roadways. No changes in the exterior lighting of the parking garage are proposed.

Recycled Water Tanks

Development of the Project, in conjunction with the planned hotel, would require additional storage capacity for recycled water produced by the Rancheria's wastewater treatment plant. Recycled water is reused on the Rancheria, providing landscape irrigation for the casino, health center and residential areas, and toilet flushing at the casino. Recycled water will also be used for toilet flushing within the entertainment center. The remaining recycled water is disposed on the Rancheria via leachfields, drip fields and spray fields. One existing recycled water tank located on a hill near the casino provides for the storage of recycled water during winter when rain events temporarily preclude the use of the sprayfields. Two additional tanks would be developed on the northern portion of the Rancheria (Figure 2-1). The tanks would be developed in an area that was previously cleared of vegetation, graded and used for fill and soil storage. The tanks would be approximately 120 feet in diameter and have a height of approximately 38 feet above ground. A pump building would be developed by the recycled water tanks to contain recycled water pumps and associated piping. The tanks and pump building would be finished in earth-tone colors with non-reflective surfaces.

Site Drainage

Site drainage for the existing casino, parking garage and associated roadways is provided by a subsurface drainage system below the surface parking lot north of the casino. This system provides treatment of stormwater and reduces storm flows to pre-development levels. This subsurface system would provide for drainage of the proposed entertainment center and expanded parking garage. Because the entertainment center and additional parking garage levels would be developed on the existing parking garage, the area of impervious surfaces would not increase.

2.4 PROJECT CONSTRUCTION AND DESIGN STANDARDS

All construction activities, including staging, would occur within the Rancheria. No off-reservation construction would occur.

The Tribe would require construction contractors to limit exterior construction to between the hours of 7 a.m. and 7 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on weekends and federally recognized holidays.

The Project would be designed and constructed to be generally consistent with the following standards. The Tribal-State Compact sets out methods by which the Tribe shall meet or exceed these codes.

California Building and Public Safety Codes

The California Building Code (CBC) as set forth in Title 24 of the California Code of Regulations (CCR) contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. The CBC includes the Energy, Electrical, Mechanical, Plumbing and Fire Codes. The CBC also includes the California Green Building Standards.

The California Public Safety Code as set forth in CCR Title 19 contains regulations governing the use and maintenance of buildings where more than 50 people may gather. The Public Safety Code requires inspections to ensure adequate emergency lighting, fire equipment, means of egress, and other safety measures.

El Dorado County Ordinances

The Project would be constructed and operated in a manner that is generally consistent with relevant El Dorado County Ordinances. These include the following:

Grading, Erosion, and Sediment Control Ordinance (Chapter 110.14)

This ordinance regulates grading to protect property and public welfare, and to avoid pollution of watercourses.

Asbestos and Dust Protection (Chapter 8.44)

This ordinance provides regulations to ensure that if naturally occurring asbestos are present on a project site, grading and construction activities would not create a health hazard.

Outdoor Lighting (Chapter 130.34)

This ordinance provides standards consistent with prudent safety practices for the elimination of excess nighttime light and glare.

El Dorado County Air Quality Management District

The Project would be constructed in a manner that substantially complies with all applicable El Dorado County Air Quality Management District Rules and Regulations, including the following:

Rule 202, Visible Emissions.

This rule limits emissions that are darker in shade than No. 1 on the “Ringelmann Chart” or of such opacity as to obscure an observer’s view to a degree equal to or greater than smoke.

Rule 205, Nuisance.

This rule prohibits discharge of air contaminants or other material that 1) cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; 2) endanger the comfort, repose, health, or safety of any such persons or the public; or 3) cause, or have a natural tendency to cause, injury, or damage to business or property.

Rule 207, Particulate Matter.

This rule Limits particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas.

Rule 215, Architectural Coatings.

This rule specifies volatile organic compounds (VOC) content limits for architectural coatings applied within El Dorado County.

Rule 223-1, Fugitive Dust.

This rule limits fugitive dust emissions from construction and construction-related activities. The rule requires submission of a detailed Fugitive Dust Control Plan to the EDCAQMD prior to the start of any construction activity for which a grading permit was issued by El Dorado County.

Rule 223-2, Asbestos Hazard Mitigation.

This rule requires an Asbestos Dust Mitigation Plan must be prepared, submitted, approved and implemented when more than 20 cubic yards of earth will be moved at sites within an Asbestos Review Area as shown on the El Dorado County Naturally Occurring Asbestos Review Map maintained by the El Dorado AQMD.

Rule 224, Cutback and Emulsified Asphalt Paving Material.

This rule specifies VOC content limits for cutback and emulsified asphalt.

Rule 233, Stationary Internal Combustion Engines.

This rule limits nitrogen oxides (NO_x) and carbon monoxide (CO) emissions from stationary internal combustion engines.

Chapter 3

ENVIRONMENTAL ANALYSIS

3.1 SCOPE OF THE OFF-RESERVATION ANALYSIS

Consistent with the requirements of the Tribal-State Compact (Compact) between the Tribe and the State of California, this section analyzes the potential off-Reservation environmental impacts of the Project. The “Reservation” is defined as the land currently held in federal trust for the Tribe and are also referred to as the Shingle Springs Rancheria (Rancheria). Environmental impacts that would occur only on the Reservation are not addressed in this analysis, only environmental impacts that would affect off-Reservation areas. This section addresses the following environmental categories.

- Aesthetics
- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use
- Noise
- Public Services
- Transportation and Traffic
- Utilities and Service Systems
- Water Resources

3.1.1 Determination of Significance

The Tribe bases the determination of significance on whether the Project would result in a substantial, adverse change in the physical conditions of the off-Reservation environment. In some cases, the determination of significance is guided by questions contained in the Off-Reservation Environmental Impact Analysis Checklist provided in the Compact. In other cases, the significance of an impact is judged in light of the environmental setting or other factors.

3.1.2 Environmental Categories with No Significant Impacts

The Tribe has determined that there would be no significant off-Reservation impacts within the following categories. These environmental categories are not discussed further in this TEIR.

Agriculture and Forest Resources

The Project would not result in the construction of facilities, roadway improvements, or utility improvements off the Rancheria. The area surrounding the Rancheria is zoned by El Dorado County as

Residential Estate and the development of the entertainment center on the existing casino parking garage would not result in land use changes that would lead to the conversion of land uses off the Rancheria that would impact agriculture or forest resources.

Cultural Resources

The Project would not result in the construction of facilities, roadway improvements, or utility improvements off the Rancheria and therefore there would be no direct impacts to off-Reservation historical or archaeological resources. No historical sites are located near the Rancheria that could be indirectly impacted by the proposed development.

Mineral Resources

The Project would not result in the construction of facilities, roadway improvements, or utility improvements off the Rancheria and therefore there would be no direct impacts to off-Reservation mineral resources.

Population and Housing

The Red Hawk Casino currently employs approximately 1,100 people. The development of the entertainment center would add approximately 150 permanent jobs. The increase in permanent jobs is expected to be filled by the existing labor force. The labor force in El Dorado County was estimated to be around 91,000 in early 2021 (EDD, 2021). Within the context of the regional labor force, the additional jobs are not expected to induce population growth in the area. No people or housing would be displaced as the result of the Project.

Recreation

The Red Hawk Casino is a recreational facility that would be expanded by development of the Project. This development would occur entirely on the Rancheria. Further, as discussed above, the Project is not expected to result in substantial unplanned population growth in the area. Accordingly, the Project would not directly or indirectly increase the use of parks or other recreational facilities in the region.

3.2 AESTHETICS

3.2.1 Setting

Environmental Setting

The visual character of the project area is defined by rolling wooded hills with scattered rural homes and fields. Due to the topography and vegetation, there is limited visibility of the existing casino and associated facilities from nearby surrounding areas. The surrounding area is primarily rural residential with 5 to 12-acre lots. The only public road within a mile of the Rancheria is Highway 50. There are numerous privately maintained roads serving the surrounding residential area. Potential off-Reservation visual receptors for the Project are residents and motorists on nearby roadways. Scenic vistas in the project area include views of the rolling wooded hills and distant views of the Sierra Nevada.

The existing casino and parking garage are built into a north-facing slope. The casino has a height of approximately 74 feet and the parking garage has a height of approximately 80 feet.

Regulatory Setting

Caltrans State Scenic Highway Program

Highway 50 is officially designated as a Scenic Highway east of Placerville to South Lake Tahoe. However, Highway 50 has not been identified by the California Department of Transportation (Caltrans) as eligible for designation.

El Dorado County General Plan

The Land Use Element of the El Dorado County General Plan includes goals to maintain characteristic natural landscape features, maintain and enhance the character of existing rural and urban communities, and elimination of high intensity lighting and glare consistent with prudent safety practices. The following specific objectives and policies are relevant to the assessment of aesthetic concerns:

OBJECTIVE 2.3.1: Topography and Native Vegetation

Provide for the retention of distinct topographical features and conservation of the native vegetation of the County.

OBJECTIVE 2.3.2: Hillsides and Ridge Lines

Maintain the visual integrity of hillsides and ridge lines.

Policy 2.3.2.1 Disturbance of slopes thirty (30) percent or greater shall be discouraged to minimize the visual impacts of grading and vegetation removal.

OBJECTIVE 2.8.1: Lighting Standards

Provide standards, consistent with prudent safety practices, for the elimination of high intensity lighting and glare.

Policy 2.8.1.1 Development shall limit excess nighttime light and glare from parking area lighting, signage, and buildings. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, sport field lighting, and other significant light sources, that could reduce effects from nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features in rural areas to further reduce excess nighttime light.

El Dorado County Zoning Ordinance

The El Dorado County Zoning Ordinance includes Chapter 130.34 – Outdoor Lighting. This chapter requires that all outdoor lighting “shall be located, adequately shielded, and directed such that no direct light falls outside the property line, or into the public right-of-way.”

3.2.2 Impact Analysis

A. Would the Project have a substantial adverse effect on a scenic vista?

Scenic vistas in the project area include views of the rolling wooded hills and distant views of the Sierra Nevada. The Project includes the development of structures that would be visible from areas surrounding the Rancheria and would affect scenic vistas in the area. These structures include the entertainment center, expanded parking garage, and two recycled water storage tanks.

Recycled Water Tanks

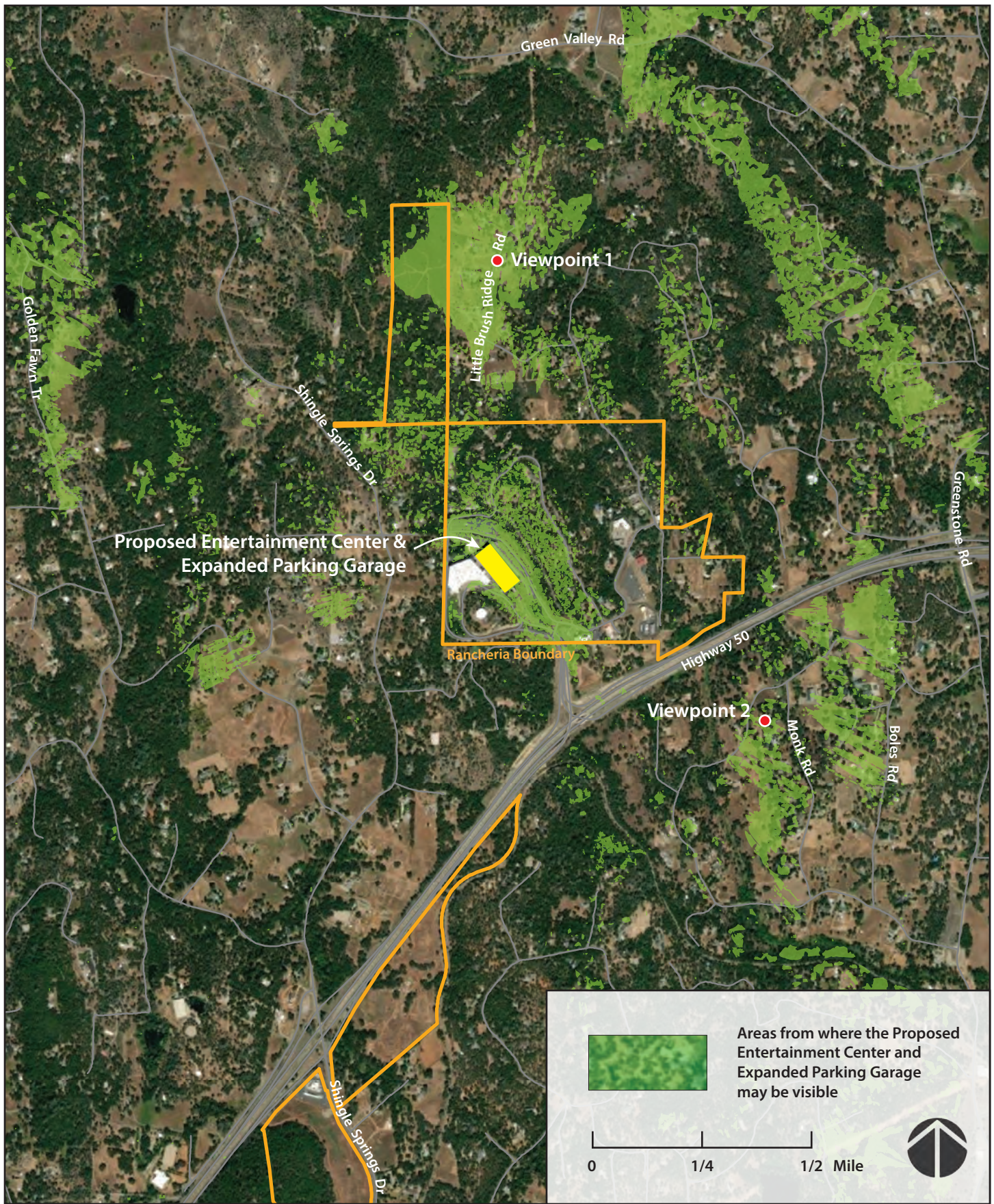
The recycled water tanks would be developed within the northern portion of the Rancheria (Figure 2-1). The two tanks would each be approximately 120 feet in diameter and 38 feet in height. Unlike the existing recycled water tank near the casino, these tanks would not be developed on a hill but in a sloping valley between low ridges. Some homes north of the Rancheria located on Little Brush Ridge Road may have partial views of the tanks. Because the tanks would be in a low-lying area, the tanks would be located below the horizon line and would be partially or completely obscured by topography and trees from most homes. The tanks would have an earth-tone finish to blend into the surrounding vegetation. With implementation of **Mitigation Measure AES-1** (planting of screening trees), impacts to scenic vistas would be less than significant.

Entertainment Center and Expanded Parking Garage

Due to topography and vegetation, there is limited visibility of the existing casino and parking garage from nearby surrounding areas. The visibility of the proposed entertainment center and expanded parking garage was analyzed to determine where the building would be visible from. Google Earth Pro was used for this analysis because it provides high-resolution terrain data that includes vegetation and existing buildings (including the existing casino and parking garage). A viewshed map (**Figure 3-1**) was generated based on the proposed height of the entertainment center and expanded parking garage.

There are no public roadways within a mile of the project site that have clear views of the project site. The only public road within a mile of the Rancheria is Highway 50. The nearest view of the existing casino from Highway 50 is a short segment of the highway west of Shingle Springs Drive. This portion of Highway 50 is approximately one mile from the project site. The proposed entertainment center and expanded parking garage would not be visible from this location as the view would be screened by the existing casino, topography, and vegetation. There is a small portion of Highway 50 south of Rancheria from which the proposed parking garage may be visible. However, this area is so small that a passing motorist would only have a momentary sideways glimpse of the structure.

As shown Figure 3-1, the proposed entertainment center would be most visible from the private roads and homes north of the Rancheria, in particular from Little Brush Ridge Road and the homes that are accessed by it. This area is a southern facing slope, and where intervening trees and vegetation do not obstruct views, the existing casino and garage can be clearly seen. Residences along Shingle Springs Drive, Monk Road, Boles Road, Golden Fawn Trail may have views of the proposed entertainment center and expanded parking garage. Views from these areas are generally more distant and are broken up by topography and vegetation.



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FIGURE 3-1
PROJECT VIEWSHED

Architectural renderings are presented in **Figures 3-2 and 3-3** that compare existing views from two off-Reservation residential areas. The viewpoints were chosen to present the closest areas where visual changes would be most noticeable.

Viewpoint 1 (Figure 3-2) is from Little Brush Ridge Road approximately 0.6 mile north of the parking garage. This architectural rendering is based on a photograph taken from this location. From this location the casino and parking garage are clearly visible against the distant hillside. A portion of the existing casino extends above the wooded horizon line. The proposed entertainment center would expand the existing parking garage and would increase the amount of building visible from this location. The expansion of the parking garage would also increase the amount of building visible from this location and the additional parking garage levels would extend partly above the wooded horizon line as viewed from this location. No views of distant hills or mountains would be blocked by the entertainment center or expanded parking garage.

Viewpoint 2 (Figure 3-3) is from a residential area near Monk Road approximately 0.7 mile southeast of the parking garage. This architectural rendering is based on a Google Earth Pro ground-level view from this location. From this location, the most prominent building on the Rancheria is the Health and Wellness Center. The Casino and parking garage are partially visible along the horizon behind trees and the Health and Wellness Center. The proposed entertainment center and parking garage expansion would increase the amount of building visible from this location. These structures would extend partly above the wooded horizon line as viewed from this location. Due to the distance and because the proposed buildings would occur between the Health and Wellness Center and casino, the change would be minor.

In summary, scenic vistas from public viewpoints along Highway 50 would not be significantly impacted by the Project. From some private viewpoints, in particular residences north of the Rancheria, the expansion of the buildings would increase the amount of development visible within the landscape. With implementation of **Mitigation Measure AES-1** (planting of screening trees), impacts to scenic vistas would be less than significant.

Mitigation Measures AES-1

- Trees will be planted on the north side of the parking garage along access roads to provide screening of the development from residential areas north of the Rancheria.
- Trees will be planted on the north side of the recycled water tanks to provide screening of the tanks from residential areas north of the Rancheria.

B. Would the Project substantially damage off-Reservation scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Project construction and operational activities would be limited to an area of the Rancheria that is already urbanized and surrounded by roads and other infrastructure. The Project would not damage any off-Reservation scenic resources. No impact would occur.



Existing View



View with proposed entertainment center and expanded parking garage



Existing View



View with proposed entertainment center and parking garage expansion

C. Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views of historic buildings or views in the area?

The Project would have limited exterior lighting. As described in Section 2.3, exterior lighting on the entertainment center would be limited to shielded security lighting consistent with lighting currently provided on the casino. Lighting of the expanded parking garage would be consistent with the existing security lighting currently used for the parking garage. As identified in Section 2.4, all exterior lighting would comply with El Dorado County's Outdoor Lighting Ordinance.

The entertainment center and expanded parking garage would not include building materials that would cause a substantial amount of glare. As described in Section 2.3, the exterior of the entertainment center would be clad with earth tone architectural panels that have horizontal ridges which cast shadows and reduce reflectivity. Windows would be provided on the south and east side of the building but would make up a small portion of the façades. The parking garage would be finished with a natural concrete surface with low reflectivity.

The Project would not create a new source of substantial light or glare. Impacts would be less than significant.

3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

3.3.1 Setting

Environmental Setting

Climate and Meteorology

The Rancheria is located in western El Dorado County, which is in the Mountain Counties Air Basin (MCAB). The climate of the MCAB is influenced by the foothill and mountainous terrain of the counties in the MCAB. El Dorado County is bordered by the Sacramento Valley to the west and the Nevada State line to the east with the western portion of the County consisting of rolling Sierra Nevada foothills, and the central and eastern portion of the County consisting of granite peaks reaching up to 10,000 feet in elevation. The climate of El Dorado County is characterized by hot dry summers and cool moist winters. The western portion of the County is characterized by higher temperatures and lower annual rainfall, and the central and eastern portions of the County are characterized by lower temperatures and higher annual rainfall.

Air quality in the Project area is influenced mostly by pollutant transport from upwind areas, such as the Sacramento and San Francisco Bay metropolitan areas, but also by local emission sources, such as wood burning stoves and fireplaces during the winter months and vehicles using area roadways and Highway 50.

Criteria Pollutants

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part

of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The pollutants regulated by the United States Environmental Protection Agency (EPA) and California Air Resources Control Board (CARB) and subject to emissions control requirements adopted by federal, state and local regulatory agencies include ozone (O₃), volatile organic compounds (VOCs), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb). These pollutants are referred to as “criteria air pollutants” because of the specific standards, or criteria, which have been adopted for them. The National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety, and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Basin Air Quality

The MCAB is currently classified as a non-attainment area for ozone and particulate matter less than 2.5 microns (PM_{2.5}) under the NAAQS (**Table 3-1**). The air basin is also a non-attainment area for ozone and particulate matter less than 10 microns (PM₁₀) under the CAAQS. The air basin and Project site are designated as attainment or unclassified for all other pollutants under the NAAQS and CAAQS.

Table 3-1
Mountain Counties Air Basin Air Quality Standard Attainment Status

Pollutant	Attainment Status	
	National	State
Ozone – 1 hr	N/A	Nonattainment
Ozone – 8 hr	Nonattainment*	Nonattainment
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO ₂)	Unclassified/Attainment	Attainment
Particulate Matter < 10 microns (PM ₁₀)	Unclassified	Nonattainment
Particulate Matter < 2.5 microns (PM _{2.5})	Nonattainment	Unclassified
* Western El Dorado County is classified as Severe-15 for the 2008 standard and Moderate for the 2015 standard. Source: CARB, 2021a; EPA, 2021.		

The MCAB portion of El Dorado County lies within the area designated by the EPA as the Sacramento Federal Ozone Nonattainment Area, comprised of Sacramento and Yolo counties, and parts of El Dorado, Solano, Placer, and Sutter counties. In 2017, the regional air districts developed the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan to address how the region would attain the 2008 8-hour ozone standard.

The project site also lies within the area designated by the EPA as the Sacramento Federal PM_{2.5} Nonattainment Area. In 2017, the EPA found that the area had attained the 2006 24-hour PM_{2.5} NAAQS. This determination of attainment did not constitute a redesignation to attainment. Rather, the State must meet additional criteria including approval of a State Implementation Plan (SIP) demonstrating maintenance of the air quality standard for 10 years after redesignation.

Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. TACs are not treated as criteria air pollutants, with ambient air quality standards. Instead, the EPA and CARB regulate TACs through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions.

Naturally Occurring Asbestos

Portions of El Dorado County are underlain by ultramafic rock formations which contains naturally occurring asbestos. Asbestos is a health hazard when friable asbestos-containing materials become airborne. Inhalation of asbestos can cause fibrotic lung disease (asbestosis) and changes in the lining of the chest cavity (pleura). These diseases can lead to reduced respiratory function and death. Long-term inhalation of asbestos fibers also increases the risk of lung cancer and mesothelioma. Naturally occurring asbestos is commonly found in serpentine and other ultramafic rock formations, and in the soils where these rock types are located.

Greenhouse Gases

Certain gases in Earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining Earth's surface temperature. Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO₂, CH₄, and N₂O occur naturally and are also generated through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing, natural gas leaks from pipelines and industrial processes and incomplete combustion associated with agricultural practices, landfills, energy providers and other industrial facilities. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF₆, which have much higher heat-absorption potential than CO₂ and are byproducts of certain industrial processes. GHGs are typically quantified in terms of "carbon dioxide equivalent" (CO₂e), a common measure used to compare the emissions of various greenhouse gases based on their global warming potential. This measure is usually presented in metric tons and is expressed as MTCO₂e.

Existing Air Quality

CARB currently operates four air quality monitoring sites within El Dorado County. The closest monitoring site is located approximately five miles from the Project site on Gold Nugget Way in Placerville. The only pollutant that CARB monitors at this location is ozone. Particulate matter is only monitored in the County at South Lake Tahoe, and PM levels at that location are not representative of the Project vicinity. Pollutant levels at other monitoring locations west of El Dorado County are not considered representative because of the lower elevation and closer proximity to urban centers. The highest ozone levels recorded in recent years at the Placerville monitoring site are summarized in **Table 3-2**.

Table 3-2
Highest Measured Ozone Concentrations near the Project Site

Pollutant/Standard	2015	2016	2017	2018	2019
Ozone					
Maximum 1-Hour Concentration (ppm)	0.103	0.112	0.104	0.115	0.081
Maximum 8-Hour Concentration (State) (ppm)	0.090	0.095	0.085	0.100	0.076
Numbers of days standard exceeded					
CAAQS 1-hour (>0.09)	4	9	1	8	0
CAAQS 8-hour (>0.070)	23	45	21	31	4
NAAQS 8-hour (2015) (>0.070 ppm)	19	41	18	28	4
Source: CARB, 2021b					

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for sensitivity include pre-existing health problems, proximity to emissions and odor sources, or duration of exposure to air pollutants or odors. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality related health problems. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The land surrounding the project site is primarily rural residential. The nearest off-Reservation residences to the project site are located west of the Rancheria off Shingle Springs Drive. One home is located approximately 400 feet from the project site. A second home is located within 750 feet and approximately 9 homes are located within 0.25 mile. The closest schools to the Rancheria are the California Montessori Project and Buckeye Elementary School located approximately 1.5 miles from the Rancheria at the corner of Shingle Springs Drive and Buckeye Road. The closest assisted living facilities and medical centers are located over 3 miles away in Shingle Springs and Placerville.

Regulatory Setting

Federal

The EPA is responsible for implementing and enforcing the federal Clean Air Act (CAA) and developing the NAAQS. As part of its implementation responsibilities, the EPA requires each state to prepare and submit a SIP that demonstrates the means to attain and/or maintain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. EPA responsibilities under the CAA includes regulating mobile sources, such as cars, trucks, buses, and planes. The provisions of Title II of the CAA have resulted in tailpipe emission standards for vehicles, which have generally strengthened over time to improve air quality

State

CARB is the state agency responsible for coordinating both state and federal air pollution control programs in California. It is primarily responsible for ensuring implementation of the 1988 California Clean Air Act (CCAA), for responding to the federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. CCAA requirements include annual emission reductions, development and use of low emission vehicles, establishment of the CAAQS, and submittal of air quality attainment plans by air districts for incorporation into the California SIP. The CCAA and other California air quality statutes invest local air districts, such as the El Dorado County Air Quality Management District (AQMD), with the responsibility for regulating most stationary sources, and to a certain extent, area sources.

The Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) is the overarching law that requires the State to set statewide GHG reduction targets. AB 32 required CARB to develop a Climate Change Scoping Plan that describes the approach California will take to reduce GHGs to achieve emission reduction goals, and to update the plan every five years. CARB approved the first Scoping Plan in 2008, and the first update was approved in 2014. The second update was approved by CARB in December 2017. The largest proposed GHG reductions recommended are from improving emission standards for light-duty vehicles, implementation of the Low-Carbon Fuel Standard, employing energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and applying a renewable portfolio standard for electricity production.

Local

The CCAA designates air districts as lead air quality planning agencies and requires air districts to prepare air quality plans. The CCAA also emphasizes the control of indirect and area-wide sources of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

The El Dorado AQMD develops and adopts rules to regulate sources of air pollution in El Dorado County. The rules most pertinent to the Project are briefly described below.

Rule 202, Visible Emissions. Limits emissions that are darker in shade than No. 1 on the “Ringelmann Chart” or of such opacity as to obscure an observer’s view to a degree equal to or greater than smoke.

Rule 205, Nuisance. Prohibits discharge of air contaminants or other material that: 1) cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; 2) endanger the comfort, repose, health, or safety of any such persons or the public; or 3) cause, or have a natural tendency to cause, injury, or damage to business or property.

Rule 207, Particulate Matter. Limits particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas.

Rule 215, Architectural Coatings. Specifies VOC content limits for architectural coatings applied within El Dorado County.

Rule 223-1, Fugitive Dust. Limits fugitive dust emissions from construction and construction-related activities. The rule requires submission of a detailed Fugitive Dust Control Plan to the El

Dorado AQMD prior to the start of any construction activity for which a grading permit was issued by El Dorado County.

Rule 223-2, Asbestos Hazard Mitigation. Requires an Asbestos Dust Mitigation Plan must be prepared, submitted, approved and implemented when more than 20 cubic yards of earth will be moved at all sites identified as being in an Asbestos Review Area as shown on the El Dorado County Naturally Occurring Asbestos Review Map maintained by the El Dorado AQMD.

Rule 224, Cutback and Emulsified Asphalt Paving Material. Specifies VOC content limits for cutback and emulsified asphalt.

Rule 233, Stationary Internal Combustion Engines. Limits nitrogen oxides (NO_x) and carbon monoxide (CO) emissions from stationary internal combustion engines.

Guide to Air Quality Assessment

The El Dorado AQMD published a *Guide to Air Quality Assessment, Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* in 2002. While the Project is not subject to CEQA review, this guide is used to ensure consistency with the El Dorado AQMD's efforts to meet air quality standards in the region. The guide provides quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions, and mitigation measures to reduce such impacts. Specific significance criteria and methodologies contained in the guide are discussed in Section 3.3.2, El Dorado AQMD Thresholds of Significance, below.

3.3.2 Impact Analysis

El Dorado AQMD Thresholds of Significance

Criteria Pollutants

The El Dorado AQMD's *Guide to Air Quality Assessment* provides numerical Project emission thresholds for precursors of ozone – reactive organic gases (ROG) and NO_x. Projects are considered to have a significant impact to the AQMD's commitments to meet ozone standards if construction or operation phase emissions of ROG or NO_x exceed 82 pounds per day. For other criteria pollutants, including CO, PM, SO₂, NO₂ and lead, a project is considered to have a significant impact on air quality if it will cause or contribute significantly to a violation of the applicable national or state ambient air quality standard.

Visibility

A project in the MCAB portion of El Dorado County will be considered as having a significant impact on visibility if it will cause or contribute significantly to a violation of the state visibility standard, which is 10 miles (when relative humidity is less than 70%). If a project is not expected to result in a significant impact for ozone or PM₁₀, it may be presumed that no significant visibility impacts will result.

Toxic Air Contaminants

For TACs, the El Dorado AQMD provides two alternative significance criteria. Exceeding either will lead to a conclusion that a project has a significant impact: 1. the lifetime probability of contracting cancer is greater than one in one million (ten in one million if the most effective emission limitation or control

technology is applied); or 2. the ground-level concentration of non-carcinogenic TACs would result in a Hazard Index of greater than 1.

Qualitative Significance Criteria

The El Dorado AQMD's *Guide to Air Quality Assessment* provides qualitative significance criteria to determine whether a project would result in a significant air quality impact. The criteria include the following:

CEQA Guidelines Appendix G Environmental Checklist Criteria. The Appendix G checklist provides criteria to determine whether a project would result in a significant impact. The Off-Reservation Environmental Impact Analysis Checklist provided in the Compact and incorporated into the analysis below is based on the Appendix G environmental checklist.

Land Use Conflicts and Exposure of Sensitive Receptors. This criterion focuses on the proximity of sensitive receptors to sources of air pollutants. For example, siting an industrial facility near a school could result in localized impacts to sensitive receptors.

Compliance with District Rules and Regulations. The El Dorado AQMD considers any proposed project that does not demonstrate compliance with all applicable AQMD rules and regulations, and its permitting requirements, as one that has a significant impact on air quality.

Compliance with U.S. EPA Conformity Regulations. The EPA has adopted regulations requiring transportation and other types of projects that have federal funding or require federal approval, to demonstrate compliance with the SIP. The Project does have federal funding and not federal approvals are required. This criterion does not apply to the Project and is not addressed further.

Odors. This criterion addresses whether a project has the potential to generate odorous emissions of a type or quantity that could meet the California Health and Safety Code definition for nuisance: odors "which cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property" (California Health and Safety Code Section 41700).

Greenhouse Gas Emissions

The El Dorado AQMD has not adopted significance thresholds for GHGs. As a local reference for project-specific significance criteria, the El Dorado AQMD recommends using guidance provided by the Sacramento Metropolitan Air Quality Management District (SMAQMD) (R. Seriah 2020, pers. comm.). SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (SMAQMD, 2020), identifies screen levels to evaluate construction and operational GHG emissions. If a project generates less than or equal to 1,100 metric tons of GHG per year and implements the SMAQMD's Tier 1 operational GHG best management practices (BMPs), the SMAQMD's operational GHG threshold of significance would not be exceeded. The Tier 1 BMPs stipulate that the project include no natural gas infrastructure and be electric vehicle ready. Projects that generate less than or equal to 1,100 metric tons of GHG per year and implement SMAQMD's Tier 1 operational GHG BMPs are considered to be consistent with CARB's 2017 Climate Change Scoping Plan. If these conditions are not met, then Tier 2 BMPs are required. In addition,

the SMAQMD has determined that projects below the GHG Operational Screening Levels would not exceed the SMAQMD's construction GHG threshold of significance if the project is less than 35 acres and meets other parameters (SMAQMD, 2020).

Methodology

Regional construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Default data was used, with the following exceptions.

- VOC levels in architectural coatings was adjusted to comply with El Dorado AQMD Rule 215.
- Construction areas, phases and durations were adjusted based on site-specific information.

A. Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The MCAB is currently designated a nonattainment area for the federal 8-hour ozone standard. The applicable air quality plan is the 2017 Sacramento Regional Ozone Air Quality Attainment Plan (AQAP), which outlines how the SFNA, including western El Dorado County, will meet the 2008 ozone NAAQS.

The El Dorado County AQMD considers projects consistent with the AQAP if:

1. The project does not require a change in the existing land use designation (e.g., a general plan amendment or rezone), and projected emissions of ROG and NO_x from the proposed project are equal to or less than the emissions anticipated for the site if developed under the existing land use designation;
2. The project does not exceed the "project alone" significance criteria;
3. The lead agency for the project requires the project to implement any applicable emission reduction measures contained in and/or derived from the AQAP; and
4. The project complies with all applicable district rules and regulations.

Project consistency with each criterion is evaluated below.

Change to Land Use Designation

The Project would be developed adjacent to the existing Red Hawk Casino on the Rancheria. El Dorado County land use designations (General Plan and Zoning Ordinance) do not apply to the Rancheria. The Project would be consistent with the existing land uses in the area (casino and associated facilities) and would not represent a change in land use.

The emission inventory forecasts of the AQAP take into account anticipated population and economic growth along with emission benefits from the federal, state, and local control measures. Emission reductions of ROG and NO_x to meet the ozone NAAQS would come from mobile source control measures rather than from reductions in stationary or area-wide emissions (SMAQMD, et al. 2017).

Evaluation of “Project Alone” Significance Criteria

During construction, on-site emissions or ozone precursors include operation of off-road (heavy duty) construction equipment such as excavators and graders, and off-site emissions include material hauling and worker trips. During operation, on-site emissions include area (landscaping equipment) and off-site mobile (vehicle trips). Construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. The detailed output model files generated for this analysis are included in **Appendix C**. The estimated construction and operation emissions are summarized in **Table 3-3**.

Table 3-3
Estimated Ozone Precursor Emissions

Phase	Maximum Day Emissions (lbs/day)	
	ROG	NOx
Construction	21.0	11.7
Operation	3.3	4.0
El Dorado AQMD Significance Threshold	82	82
Significant?	No	No
Source: CalEEMod output tables, Appendix C.		

Under methodology contained in the El Dorado AQMD’s *Guide to Air Quality Assessment*, ROG and NOx emissions from construction may be assumed to be not significant if:

- the project encompasses 12 acres or less of ground that is being worked at one time and at least one of the mitigation measures relating to such pollutants described in Section 4.4.1 of this chapter (or an equivalent measure) is incorporated into the project; or
- the project proponent commits to pay mitigation fees in accordance with the provisions of an established mitigation fee program in the District (or such program in another air pollution control district that is acceptable to District).

The Project construction area is approximately 3 acres, which is less than the 12-acre threshold identified in (a) above, and the Project would implement at least one of the mitigation measures identified in the *Guide to Air Quality Assessment*, which are identified below in **Mitigation Measure AQ-1**. With implementation of Mitigation Measure AQ-1, the Project’s construction-related emissions of ROG and NOx would be less than significant.

Under methodology contained in the El Dorado AQMD’s *Guide to Air Quality Assessment*, projects are considered to have a significant impact to the AQMD’s commitments to meet ozone standards if construction or operation phase emissions of ROG or NOx exceed 82 pounds per day. As shown in Table 3-3, operational ROG and NOx emissions would be less than the significance threshold. Accordingly, operational ROG and NOx emissions would be less than significant.

Mitigation Measure AQ-1

To ensure that the Project's construction emissions remain less than significant, one of the following El Dorado AQMD construction mitigation measures shall be implemented:

- Require the prime contractor to provide an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum, a fleet-averaged 15 percent NO_x reduction compared to the most recent CARB fleet average. Implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. In addition, the inventory list shall be updated and submitted monthly throughout the duration of when the construction activity occurs.
- Require the prime contractor to use an alternative fuel, other than Diesel, verified by CARB or otherwise documented through emissions testing to have the greatest NO_x and PM₁₀ reduction benefit available, provided each pollutant is reduced by at least 15 percent.

Implementation of Applicable Ozone Plan Reduction Measures

Appendix E of the El Dorado AQMD's *Guide to Air Quality Assessment* identifies measures that can be incorporated into a project to ensure consistency with the AQAP. **Mitigation Measure AQ-2** identifies specific measures that could be incorporated into the Project design to ensure consistency with the AQAP. One or more of the measures would be implemented to ensure consistency with the AQAP.

Mitigation Measure AQ-2

To ensure the Project's consistency with the 2017 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, one or more measures identified in Appendix E of the El Dorado AQMD's *Guide to Air Quality Assessment* shall be incorporated into the project design. The measures identified include the following:

- Provide bicycle lockers and/or racks.
- Provide electric vehicle charging facilities.
- Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
- Install ozone destruction catalyst on air conditioning systems in consultation with El Dorado AQMD.
- Install Energy Star labeled roof materials.
- Implement Clean Air Business Practices such as using low-emission delivery vehicles, contract with alternative-fuel waste hauling companies, etc., in consultation with El Dorado AQMD.
- Provide electric shuttle to transit stops.
- Other proposed strategies in consultation with El Dorado AQMD.

Compliance with El Dorado AQMD Rules and Regulations

As identified in Section 2.4, the Project would be constructed in a manner that substantially complies with all applicable El Dorado AQMD Rules and Regulations. The bid specifications and construction contract would stipulate compliance with applicable El Dorado AQMD Rules and Regulations, including the preparation and implementation of a Fugitive Dust Control Plan and Asbestos Dust Mitigation Plan.

Impact Conclusion

With the implementation of **Mitigation Measures AQ-1** and **AQ-2**, the Project would meet each criterion identified by the El Dorado AQMD's *Guide to Air Quality Assessment* to determine consistency with the AQAP. The Project would not conflict with or obstruct implementation of the AQAP. Impacts would be less than significant.

B. Would the Project violate any air quality standard or contribute to an existing or projected air quality violation?

Construction

As identified under impact criterion A above, under methodology contained in the El Dorado AQMD's *Guide to Air Quality Assessment*, ROG and NOx emissions from Project construction are assumed to be not significant with implementation of Mitigation Measure AQ-1. This methodology also states that if ROG and NOx mass emissions are determined to be not significant, then it can be assumed that exhaust emissions of other air pollutants from the operation of equipment and worker commute vehicles are also not significant.

As identified in Section 2.4, the Project would be constructed in a manner that substantially complies with all applicable El Dorado AQMD Rules and Regulations, including preparation and implementation of a Fugitive Dust Control Plan. Implementation of the Fugitive Dust Control Plan would ensure that emissions of PM10 would be less than significant.

Because ROG, NOx and PM10 emissions would be less than significant, under methodology contained in the El Dorado AQMD's *Guide to Air Quality Assessment*, visibility impacts would also be less than significant.

Operation

As identified under impact criterion A above, operational ROG and NOx emissions would be less than the significance threshold. Accordingly, operational ROG and NOx emissions would be less than significant.

Emissions of CO were evaluated according to methodology provided in El Dorado AQMD's *Guide to Air Quality Assessment*. As shown in **Table 3-4**, estimated emissions from the Project in combination with background concentration levels estimated in the *Guide to Air Quality Assessment* would not exceed the most stringent ambient air quality standards. Operational CO emissions would be less than significant.

Table 3-4
Carbon Monoxide Concentration and Significance Determination

	1-Hour Average (ppm)	8-Hour Average (ppm)
1. Background Concentration	1.32	0
2. Project-Related Pollutant Concentration	1.3	0.9
3. Anticipated Total Concentration	2.6	0.9
4. Ambient Air Quality Standard*	20	9
5. Significance Determination: Significant if >0	-17.4	-8.1
* Most stringent 1-hour standard is used (California). Source: Methodology and background concentrations from El Dorado AQMD, 2002.		

Operational emissions of other criteria pollutants would be less than significant under criteria provided by El Dorado AQMD's *Guide to Air Quality Assessment*. PM₁₀ may be assumed to be insignificant for land development projects where particulate emissions are primarily associated with indirect emissions from gasoline-powered vehicles. For directly emitted SO₂ or NO₂, project-related concentrations need only be estimated if the project is one that contains components that are known to produce SO₂ or NO₂, such as sources that burn sulfur-based fuels or that have components such as power plants or oil refineries, or projects that generate more heavy-duty vehicle trips than occur generally. The Project would not use sulfur-based fuels and would generate PM₁₀, SO₂ and NO₂ primarily from indirect vehicle trips. Those trips would be a typical mix - primarily passenger cars and light trucks/SUVs. As a result, emissions of PM₁₀, SO₂ and NO₂ would be less than significant. Likewise, the El Dorado AQMD's *Guide to Air Quality Assessment* states that lead, sulfates and hydrogen sulfide are assumed to be not significant except for industrial sources that have a potential to emit these pollutants such as a foundry, acid plant or pulp mill, none of which are proposed.

The El Dorado AQMD's *Guide to Air Quality Assessment* indicates that it may be assumed that visibility impacts from development projects in the MCAB portion of the County are not significant; such impacts will be controlled to the maximum extent feasible through state and national regulatory programs governing vehicle emissions, and through mitigation required for ozone precursors and particulate matter. As such, the Project would result in a less than significant impact to visibility.

Impact Conclusion

With the implementation of **Mitigation Measure AQ-1**, the Project would not violate any air quality standard or contribute to an existing or projected air quality violation. Impacts would be less than significant.

C. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

As identified in Table 3-1, the MCAB is currently classified as a non-attainment area for ozone and particulate matter less than 2.5 microns (PM_{2.5}) under the NAAQS. The air basin is also a non-attainment area for ozone and particulate matter less than 10 microns (PM₁₀) under the CAAQS.

The El Dorado AQMD's primary criterion for determining whether a project has significant cumulative impacts is whether the project is consistent with an approved plan or mitigation program of District-wide or regional application in place for the pollutants emitted by the project. This criterion is applicable to both the construction and operation phases of a project.

Ozone

The Project's consistency with the AQAP and related AQMD mitigation programs is discussed under impact question A above. As described above, with implementation of **Mitigation Measures AQ-1** and **AQ-2**, the Project's emissions of the ozone precursors ROG and NO_x would be less than significant and the Project would meet each criterion identified by the El Dorado AQMD's *Guide to Air Quality Assessment* to determine consistency with the AQAP.

PM₁₀

For PM₁₀, the El Dorado AQMD determines that the cumulative impacts are not significant for projects where the majority of the emissions of these pollutants is attributable to motor vehicle sources, and:

- a. The project is not significant for "project alone" emissions;
- b. The project complies with all applicable rules and regulations of the District; and
- c. The project is not cumulatively significant for ROG, NO_x, and CO based on the criteria provided in the *Guide to Air Quality Assessment*.

As identified under impact question B above, Project emissions of PM₁₀ would be less than significant, thus meeting criterion "a." As provided in Section 2.4, the Project would be designed and constructed to in compliance with the applicable El Dorado AQMD Rules, thus meeting criterion "b." With regards to criterion "c," as discussed under ozone above, the Project is not cumulatively significant for ROG and NO_x. The remaining criteria pollutant referenced under criterion "c" – CO – is an attainment pollutant in El Dorado County, and local CO concentrations are expected to decline even further in the future as more stringent CO standards for motor vehicles take effect. The El Dorado AQMD does not consider CO to be an area-wide or regional pollutant that is likely to have cumulative effects. Accordingly, CO emissions for a project will ordinarily be considered not cumulatively significant as long as "project alone" emissions are not significant. As discussed under impact questions A and B above, based on methodology provided in El Dorado AQMD's *Guide to Air Quality Assessment*, emissions of CO from construction and operation of the Project would be less than significant. The El Dorado AQMD does consider the potential for CO "hotspots" caused by the proposed project in conjunction with other nearby projects. However, because of the rural nature of the project area and the lack of any nearby roads or intersections operating at level of service E or lower, localized concentrations of CO are considered less than significant. Accordingly, Project emissions for each criteria pollutant referenced under criterion "c" would not be cumulatively significant. Therefore, all of the criteria would be met and the cumulative PM₁₀ impacts would be less than significant.

PM2.5

As discussed in Section 3.3.1, while the EPA has found that the region has attained the 2006 24-hour PM2.5 NAAQS, the region has not been officially redesignated as being in attainment. The SMAQMD, El Dorado AQMD and other regional air districts prepared the *PM2.5 Implementation/Maintenance Plan and Re-designation Request for Sacramento PM2.5 Nonattainment Area* (PM2.5 Plan) (SMAQMD, et al. 2013) to identify how PM2.5 levels would be managed in the region. The PM2.5 Plan found that the majority of directly emitted PM2.5 in the nonattainment area is the result of fuel combustion, including wood burning. Since 2008, the local air districts of the Sacramento PM2.5 Nonattainment Area adopted 13 control measures that reduced PM2.5 or its precursors (including NOx and SO₂). The El Dorado AQMD does not have an adopted control measure for wood burning or other direct emissions of PM2.5. In addition to local control measures, CARB has adopted control measures to reduce PM2.5 and its precursors from on-road and off-road vehicles. As outlined in the PM2.5 Plan, existing control measures will be sufficient to maintain compliance with the 2006 24-hour PM2.5 NAAQS. During construction, fugitive particulate matter (including PM2.5) would be minimized with compliance with applicable El Dorado AQMD Rules, including preparation and implementation of a Fugitive Dust Control Plan. During operation, the primary source of PM2.5 is from mobile sources (vehicle trips), which are addressed by CARB regulations. The Project would not involve wood burning and would comply with applicable El Dorado AQMD Rules. Therefore, cumulative PM2.5 impacts would be less than significant.

Impact Conclusion

With the implementation of **Mitigation Measures AQ-1** and **AQ-2**, the Project would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is nonattainment. Impacts would be less than significant.

D. Would the Project expose off-Reservation sensitive receptors to substantial pollutant concentrations?

Toxic Air Contaminants

Construction activities would result in short-term emissions of diesel particulate matter (diesel PM) from off-road heavy-duty diesel equipment exhaust and diesel-fueled haul trucks. Diesel PM was identified as a TAC by CARB in 1998. Health risks associated with exposure of sensitive receptors to TAC emissions are typically based on the concentration of a substance or substances in the environment (dose) and the duration of exposure to the substance(s). Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a long period of time. According to the California Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period. Project construction, however, would occur over a much shorter period. Site preparation and grading phases, which typically generate most of the diesel PM on a construction site, would not be required as the proposed facilities would be developed on the existing parking garage. Use of off-road heavy-duty diesel equipment would be limited and temporary, and diesel PM emissions would disperse rapidly with distance from the source. Because TAC emissions would be limited in duration and amount, the project would result in a less-than-significant impact.

Operational TACs are primarily associated with manufacturing sites, dry cleaners, autobody shops and industrial land uses. The Project does not include any facilities that would emit substantial sources of TACs; accordingly, operational TAC emissions would be less than significant.

Naturally Occurring Asbestos

Construction within areas where naturally occurring asbestos (NOA) occurs can cause friable asbestos-containing materials to become airborne and present a health hazard. The Rancheria is within an NOA Review Area identified by El Dorado County. Under El Dorado AQMD Rule 223-2, construction projects in NOA Review Areas that move more than 20 cubic yards are required to comply with specified management practices and prepare an Asbestos Dust Mitigation Plan.

As identified in Section 2.4, the Project would be constructed in compliance with the applicable El Dorado AQMD Rules, including Rule 223-2 – Asbestos Hazard Mitigation. The bid specifications and construction contract would stipulate compliance with applicable El Dorado AQMD Rules and Regulations, including the preparation and implementation of an Asbestos Dust Mitigation Plan. The Asbestos Dust Mitigation Plan would identify best management practices to stabilize soil and avoid the generation of dust when handling asbestos-containing material. Compliance with Rule 223-2 would reduce impacts to a less-than-significant level.

Land Use Conflicts and Exposure of Sensitive Receptors

Locating a project with air pollutant emissions near existing sensitive receptors could result in adverse air quality impacts to sensitive receptors. The El Dorado AQMD's *Guide to Air Quality Assessment* describes sensitive receptors as facilities that house or attract children, the elderly, people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, and convalescent facilities are examples of sensitive receptors. As identified in Section 3.3.1, the nearest off-Reservation residence is located approximately 400 feet from the project site. A second home is located within 750 feet and approximately 9 homes are located within 0.25 mile. The closest schools are located approximately 1.5 miles from the Rancheria and the closest assisted living facilities and medical centers are located over 3 miles away.

The El Dorado AQMD's *Guide to Air Quality Assessment* identifies the following land use conflicts that should be avoided:

- A sensitive receptor in close proximity to a congested intersection or roadway with high levels of emissions from motor vehicles. High concentrations of carbon monoxide or toxic air contaminants are the most common concerns.
- A sensitive receptor close to a source of TACs or to a potential source of accidental releases of hazardous materials.
- A sensitive receptor close to a source of odorous emissions. Although odors generally do not pose a health risk, they can be quite unpleasant and often lead to citizen complaints to the District and to local governments.
- A sensitive receptor close to a source of high levels of nuisance dust emissions.

As identified in the toxic air contaminants discussion above, the Project would not directly generate significant sources of TACs during construction or operation. The Project would not involve the use of

hazardous materials that have the potential to result in dangerous air emissions. During construction, nuisance dust emissions would be minimized by preparation and implementation of a Fugitive Dust Control Plan, consistent with El Dorado AQMD Rules. Operation of the Project would not result in nuisance dust emissions.

The Project would not generate significant odors during construction or operation of the proposed facilities. The El Dorado AQMD's *Guide to Air Quality Assessment* identifies common types of facilities known to produce odors. Examples include landfills, chemical manufacturing, auto body shops and coffee roasters. The proposed entertainment center would include a kitchen that would occasionally generate odors from cooking and baking. However, these odors are not expected to be strong or objectionable and would dissipate quickly.

Impact Conclusion

The Project would not expose off-Reservation sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.

E. Would the Project create objectionable odors affecting a substantial number of people off-Reservation?

As described under impact question D above, the Project would not generate significant odors during construction or operation of the proposed facilities. The proposed entertainment center would include a kitchen that would occasionally generate odors from cooking and baking. However, these odors are not expected to be strong or objectionable and would dissipate quickly. Impacts would be less than significant.

F. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the off-Reservation environment?

Construction of the project would emit GHG emissions through the combustion of fossil fuels by heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the site. Emissions of GHGs were calculated using CalEEMod (Version 2016.3.2) for each year of construction of the project. As shown in **Table 3-5**, the maximum annual construction emissions would be 252 MT CO₂e. Construction CO₂e emissions would be less than the SMAQMD screening threshold; the Project would have a less-than-significant impact.

The proposed development would also result in operational GHG emissions. A variety of sources are considered in estimating CO₂e emissions. The largest source is 'mobile' which consists of vehicle trips of patrons and employees, followed by 'energy' which includes emissions associated with electricity use. Other sources include 'area,' which accounts for landscape equipment, and consumer products; 'waste,' which accounts for emissions associated with disposal of solid waste in landfills, and 'water,' which accounts for energy associated with the delivery of potable water and the treatment of wastewater. The estimated operational-related emissions of CO₂e are summarized in Table 3-5. The Project would be responsible for the generation of 835 MT CO₂e. According to SMAQMD's *Guide to Air Quality Assessment in Sacramento County*, if a project generates less than or equal to 1,100 metric tons of GHG per year and implements the SMAQMD's Tier 1 operational GHG BMPs, the project would result in a less

than significant impact. **Mitigation Measure AQ-3** provides for implementation of SMAQMD's Tier 1 operational GHG BMPs.

Table 3-5
Estimated Greenhouse Gas Emissions

Source	CO ₂ e Emissions (MT/Year)
Construction	
2021	101
2022	252
Operation	
<i>Area</i>	<i>0.005</i>
<i>Energy</i>	<i>197</i>
<i>Mobile</i>	<i>540</i>
<i>Waste</i>	<i>1</i>
<i>Water</i>	<i>97</i>
Total Operational Emissions	835
SMAQMD Screening Threshold	1,100
Exceeds Screening Threshold?	No
CalEEMod, Appendix C	

Mitigation Measure AQ-3

- No natural gas or propane infrastructure shall be included within the proposed entertainment center.
- The proposed parking garage addition shall be designed and constructed to meet 2019 CalGreen Tier 2 standards for electric vehicle (EV) charging, except that all EV capable spaces shall be constructed as EV ready spaces. EV ready spaces shall include the installation of dedicated branch circuit(s), circuit breakers, and other electrical components, including a receptacle or blank cover needed to support future installation of one or more charging stations.

With the implementation of **Mitigation Measure AQ-3**, the Project would not generate GHGs, either directly or indirectly, that may have a significant impact on the off-Reservation environment. Impacts would be less than significant.

G. Would the Project conflict with any off-Reservation plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

To determine whether a project would conflict with any plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, the SMAQMD recommends that project emissions be evaluated with respect to consistency with the following plans and policies, if applicable, that have been adopted to reduce GHG emissions:

- A jurisdiction's qualified climate action plan or GHG reduction plan.

- The Metropolitan Transportation Plan/Sustainable Communities Strategy.
- CARB's 2017 Climate Change Scoping Plan (including State climate goals beyond 2030).

El Dorado County does not have an adopted climate action plan or GHG reduction plan.

The 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), prepared by the Sacramento Council of Governments (SACOG) is the regional transportation plan that includes western El Dorado County. The MTP/SCS is a regional plan that identifies where and what future transportation investments should be made in the region to support the region's population and economy. The plan also lays out a path for improving our air quality, preserving open space and natural resources, and reducing GHG emissions. Typically, a project is considered consistent with the MTP/SCS if it is consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in the adopted SCS. Because the Rancheria is not within the jurisdiction of El Dorado County, the County's General Plan and Zoning Ordinance do not govern land uses on the Rancheria. With regards to the Project's consistency with SCS policies, the MTP/SCS policies generally seek to balance jobs and housing in communities to reduce the growth rate of vehicle miles traveled. The MTP/SCS does not provide specific policies that may be used to evaluate individual development projects. However, on a general level the MTP/SCS anticipates the growth of jobs and housing within the Rural Residential Community of El Dorado County, and the Project would provide jobs in an area with a low jobs/housing balance. Additionally, the Project would be developed along the existing transportation corridor of Highway 50, within an existing development (Red Hawk Casino) with existing transit service (El Dorado Transit). Therefore, based on a review of the MTP/SCS policies, the Project would not conflict with policies identified to reduce GHG emissions.

With regards to consistency with CARB's 2017 Climate Change Scoping Plan, the SMAQMD considers a project that generates less than or equal to 1,100 metric tons of GHG per year and implements the SMAQMD's Tier 1 operational GHG BMPs is consistent with the Scoping Plan. As identified under impact question F, operation of the Project would generate 835 MT CO₂e per year and **Mitigation Measure AQ-3** provides for implementation of SMAQMD's Tier 1 operational GHG BMPs. With the implementation of **Mitigation Measure AQ-3**, the Project would not conflict with any off-Reservation plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Impacts would be less than significant.

3.4 BIOLOGICAL RESOURCES

3.4.1 Setting

Environmental Setting

Study Methods

Biological resources of off-Reservation areas near the project site were characterized based on site survey, aerial photo interpretation, review of pertinent literature, and database queries. Sources of data referenced for this study included the following:

- California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife [CDFW], 2021);
- Inventory of Rare and Endangered Plants (California Native Plant Society [CNPS], 2021);
- Special Plants List (CDFW, 2021; U.S. Fish and Wildlife Service [USFWS], 2021); and
- Special Animals List (CDFW, 2021; USFWS, 2021)
- USFWS National Wetland Inventory.

Regional Setting

The project area (project site and adjacent off-Reservation areas) is located within the Sierra Nevada Foothills geographic subregion, which is contained within the Great Central Valley geographic subdivision of the larger California Floristic Province (Hickman, 1993). The project area is at the border between Climate Zone 9 “Central Valley Thermal Belt” and Climate Zone 7 – “Gray Pine Belt”; the climate is Mediterranean, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters with frosts of short duration (Brenzel, 2007). The topography of the project area is rolling and consists of foothills incised by seasonally-flowing streams. The elevation ranges from approximately 1,200 feet in stream channels to 1,500 feet on ridgetops. The project area is located within the South Fork American River watershed. Mean annual precipitation in Shingle Springs is approximately 34 inches, while the temperature ranges from 40 to 92 degrees Fahrenheit. The project area setting is an existing parking garage next to the casino. Off-reservation settings are a mixture of residential estates, ranches, and open space (chaparral and oak woodland), connected by a network of roads.

Plant Communities

Plant communities are assemblages of plant species that occur together in the same area and are defined by both species composition and relative abundance. The project area is urbanized and landscaped and does not contain natural plant communities. The vegetation in the project area is lawn grasses, ornamental shrubs, and blue oak trees. The nearest off-Reservation areas are a mixture of residential landscaping, areas devoid of vegetation (roads and buildings), and patches of mixed oak woodland and non-native annual grassland.

Ruderal / urbanized. This habitat can be classified as disturbed or converted natural habitat that is now either in ruderal state (disturbed and weedy), mowed, graded, or urbanized with pavement, landscaping, and structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive ruderal species or ornamental plants lacking a consistent community structure.

Non-native annual grassland. These grasslands consist of open areas of non-native pasture grasses and weedy forbs. These annual grasslands have replaced native habitats of perennial bunchgrasses. Common grass species in this community on the Rancheria and vicinity include: oats (*Avena* spp.), bromes (*Bromus* sp.), barley (*Hordeum* spp.), and fescue (*Festuca* spp.). Common forbs include turkey mullein (*Eremocarpus setigerus*), yellow star thistle (*Centaurea solstitialis*), and black mustard (*Brassica nigra*).

Mixed oak Woodland. The mixed oak woodland community is commonly two-tiered, consisting of a dense overstory of interior live oak (*Quercus wislizeni*) and blue oak (*Q. douglasii*) and a well-developed

understory of various shrubs and herbaceous species. Other tree species that occur include valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), and gray pine (*Pinus sabiniana*).

Wildlife Habitats

A sensitive natural wildlife community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, state, or federal agencies. The Project Area is urbanized and does not contain sensitive natural wildlife communities. The Project Area is classified as “Urban” and “Barren” wildlife habitat types by DFW’s Wildlife Habitat Relationship System (WHR). Off-Reservation lands surrounding the Project Area have the following wildlife habitat types: Mixed Chaparral; Valley Foothill Riparian; Blue Oak Woodland; Valley Oak Woodland; Annual Grassland; Riverine; Pasture; Urban; and Barren. Off-Reservation areas near the Project Area do not contain sensitive habitats, with the exception of narrow stream corridors, which contain riparian habitat.

Wetlands and Other Waters of the U.S./State

The definition of federally protected wetlands and other waters of the U.S., pursuant to the Clean Water Act, is described under the Section 404 of the Clean Water Act discussion in the Regulatory Setting below. The definitions of waters of the State is described under California Water Code below.

The Project Area contains no wetlands or other waters of the U.S./State (**Figure 3-4**). The nearest waters of the U.S. is a stream channel (and associated riverine wetlands) 500 feet north of the Project Area, which is an unnamed tributary of Slate Creek that runs through the Rancheria. The nearest off-Reservation waters of the U.S./State is a stream channel (and associated riverine wetlands) 1,700 feet to the northwest, which is also an unnamed tributary of Slate Creek.

Special-Status Species

The Project site falls within the general geographic range of a number of “special-status” species (CDFW, 2021; CNPS, 2021; USFWS, 2021). In this assessment, special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. State protected species include those species listed, or proposed for listing under the California Endangered Species Act (14 California Code of Regulations [CCR] 670.5), species considered rare or of special concern, or fully protected animals, as defined by the State of California (CDFW Code Section 3511, 4700, and 5050), or plants listed as rare or endangered under the California Native Plant Protection Act (CDFW Code Section 1900 et seq.). Federally protected species include those species listed, proposed for listing, and candidates for listing under the Federal Endangered Species Act (50 Code of Federal Regulations [CFR] 17.11-17.12), and species identified as rare or of special concern by USFWS.

No special-status species were reported to occur in the Project Area, according to all of the biological databases queried. Table D1 in **Appendix D** lists the special-status species that were reported to occur within 10 miles of the project site. Of the plants and animals listed in Table D1, no federally listed species, or otherwise special-status species, have a significant potential to occur in the project area. Suitable, or requisite, habitat for these species is not present in the project area. Regionally, special-status species are confined to sensitive habitats such as lands that contain serpentine or ultramafic soils,



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 3-4
WATERS NEAR PROJECT SITE

in stream channels or riparian corridors, or in undisturbed chaparral or oak woodland habitat. The project site is not near these types of habitats.

Regulatory Setting

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, is designed to protect birds that migrate and cross state lines to provide management of migratory birds at a federal level.

Federal Endangered Species Act

The USFWS administers the Federal Endangered Species Act (FESA – 16 United States Code [U.S.C.] Section 153 *et seq.*) and thereby has jurisdiction over federally-listed threatened, endangered, and proposed species. Projects that may result in “take” of a listed species must consult with the USFWS.

Section 404 of the Clean Water Act

The U.S. Army Corps of Engineers (USACE) is the agency responsible for regulating the discharge of dredged or fill material into jurisdictional wetlands and other waters of the U.S. under Section 404 of the Clean Water Act (CWA). The federal government defines wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR Section 328.3(b) and 40 CFR Section 230.3). “Other waters of the U.S.” refer to aquatic features that are regulated by the Clean Water Act but are not wetlands (33 CFR Section 328.3).

California Endangered Species Act

The California Endangered Species Act (CESA) is similar in many ways to the FESA. CESA is administered by the California Department of Fish and Wildlife (CDFW) on off-Reservation lands. CESA provides a process for CDFW to list species as threatened or endangered in response to a citizen petition or by its own initiative (Fish and Game Code § 2070 *et seq.*). Section 2080 of CESA prohibits the take of species listed as threatened or endangered pursuant to the Act (Fish and Game Code § 2080).

California Water Code

Section 13050(e) of the California Water Code defines waters of the State as any surface water or groundwater, including saline waters, within the boundaries of the state. The California Water Code contains rules and requirements consistent with the federal CWA for discharges to waterways. It defines water quality objectives as the limits or levels of water constituents that are established for reasonable protection of beneficial uses.

Regional Habitat Conservation Plans

The project area does not fall within the boundaries of any adopted habitat conservation plan (HCP) or natural community conservation plan. El Dorado County does not have an adopted HCP or natural community conservation plan, but they are developing a future plan called the Integrated Natural Resources Management Plan (INRMP) for the western half of the County.

El Dorado County General Plan

The project area is within a Biological Corridor overlay district identified in the El Dorado County General Plan. This overlay district applies to lands identified by El Dorado County as having high wildlife habitat values because of extent, habitat function, connectivity and other factors. Lands located within this overlay district are subject to additional land use restrictions including increased minimum parcel size, higher canopy-retention standards and/or different mitigation standards for oak woodlands, lower thresholds for grading permits, higher wetlands/riparian retention standards, increased riparian corridor and wetland setbacks and greater protection for rare plants.

3.4.2 Impact Analysis

A. Would the Project have a substantial adverse impact, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Construction and operation of the Project would not directly impact special-status species or modify natural habitat which could support special-status species because the proposed area of development was already cleared of natural habitats, graded, and maintained as landscaping and roadways. The project area is devoid of wildlife except for birds, which are analyzed in the next discussion. The project area is currently subject to some indirect lighting and noise impacts from private vehicles and buses and operation of the casino. The nearest off-Reservation areas adjacent to the project site are currently a mixture of open space, roads, and residences, and are subject to some indirect lighting and noise impacts from vehicles, landscape maintenance, and residential activities. As such, the Project would be developed in a previously disturbed area and development of the Project would not introduce significant additional disturbances to wildlife habitat. Accordingly, Project impacts to special-status species would be less than significant.

Nesting birds are protected by state and federal laws. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs; Fish and Game Code §3511 designates certain bird species “fully protected”, making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC 668) specifically protects bald and golden eagles from harm or trade in parts of these species. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle.

Migratory bird species and other special-status bird species were reported in databases (CNDDDB and USFWS) in the vicinity of the project area. The project site, and adjacent off-Reservation areas, contain suitable nesting habitat for various bird species because mature trees and dense vegetation are present. However, no active nests were observed during the field survey. If construction activities, including development of the proposed recycled water tanks, are conducted during the nesting season, nesting birds could be indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact to nesting birds

before mitigation. However, with implementation of **Mitigation Measures BIO-1** (pre-construction surveys, avoidance measures), this impact would be reduced to a less-than-significant level.

Mitigation Measures BIO-1

If construction activities would occur during the nesting season (March to September), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid “take” of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.

B. Would the Project have a substantial adverse effect on any off-Reservation riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Construction and operational activities would be limited to an urbanized area on the Reservation which is used currently for landscaping and roadways. The nearest on-Reservation riparian habitat is 200 feet to the east in the unnamed tributary of Slate Creek; this riparian habitat is also the nearest sensitive natural community. The nearest off-Reservation riparian habitat is over 2,000 feet to the northwest; this is also the nearest sensitive natural community. Implementation of the Project would not directly impact any riparian habitat or other sensitive natural community, and the project site is too far away from the nearest riparian habitat or other sensitive natural community to result in any significant indirect adverse impacts. As such, Project impacts to off-Reservation natural communities would be less than significant.

C. Would the Project have a substantial adverse effect on federally protected off-Reservation wetlands as defined by Section 404 of the Clean Water Act?

The Project would not result in direct adverse impacts to any federally protected off-Reservation wetlands. All construction activities would be located on the Rancheria and would be limited to upland areas that contain no wetlands or other jurisdictional waters of the United States. Project implementation could result in indirect adverse impacts to off-Reservation wetlands or channels by construction activities, which could degrade downstream surface waters by storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. However, because the proposed facilities would be developed on the existing parking garage, no grading would be required, and other ground disturbing activities would be limited. In addition, all potentially hazardous materials used during construction would be contained, stored, and used and handled in compliance with applicable federal, state, and local standards and regulations. As identified in Section 2.4, the Project would be constructed in a manner that is generally consistent with El Dorado County’s Grading Ordinance which prohibits degradation of water quality from construction sites. Due to the incorporation of these provisions, potential water quality impacts would be less than significant.

Wastewater generated by operation of the entertainment center would be treated by the existing wastewater treatment plant on the Rancheria. Recycled wastewater would be used for landscape irrigation and toilet flushing within the Red Hawk Casino and proposed entertainment center. Excess recycled water would be disposed by land application on the Rancheria, consistent with the current practice. There would be no direct or indirect discharge of treated wastewater to surface waters on or off the Rancheria.

The Project would not have a substantial adverse effect on federally protected off-Reservation wetlands. Direct and indirect effects to federally protected off-Reservation wetlands would be less than significant.

D. Would the Project Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Project construction and operational activities would be limited to an area of the Rancheria that is already urbanized and surrounded by roads and other infrastructure. Off-reservation areas near the project site consist of a mosaic of undeveloped open space and developed areas with roads, fences, and other barriers. Stream corridors in the vicinity may function as local wildlife corridors, and perennial streams such as the lower reaches of Tennessee Creek and Slate Creek may function seasonally as fisheries. The nearest migratory corridor is the South Fork American River. The Project would not affect existing open space, fisheries, or wildlife corridors because the project site is thousands of feet distant from these resources and because implementation of the Project does not require the destruction of natural habitats that might interfere with the off-Reservation movement of fish or wildlife species. Therefore, the Project would have a less-than-significant impact on these types of resources.

E. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The Project does not fall within the boundaries of any adopted HCP or natural community conservation plan. Thus, there would be no conflict or impact with respect to conservation plans.

3.5 GEOLOGY AND SOILS

3.5.1 Setting

Environmental Setting

Geology

The project site is located in a transitional zone between two geomorphic provinces, with the Great Valley Geomorphic Province to the west and the Sierra Nevada Geomorphic Province to the east. Rock deposits within the project area consist of Mesozoic sedimentary, granitic, volcanic and ultramafic rocks (Miles and Goudey, 1997). Historic mining activities in the area reflect the presence of auriferous (gold-bearing) deposits. Evidence of mining activities is found nearby where ground sluicing, mining ditches and mine shafts are present (Greenway and Stearns, 1977).

Within the project area is a relatively narrow zone of chaotically intermixed rocks known as the Sierra Foothills Melange Belt. These rocks include what once was an ancient sea floor. Within this belt, especially along the Bear Mountain Fault Zone, the metamorphic rocks are intermixed with rocks containing serpentine called serpentinite. Serpentine is a group of common rock-forming minerals that are derived from magnesium-rich silicate minerals in igneous and metamorphic rocks. Naturally Occurring Asbestos (NOA) minerals, including chrysotile and tremolite, can also occur naturally in serpentine rock. The Rancheria is within an NOA Review Area identified by El Dorado County.

Seismicity

Earthquakes on regional fault systems are expected to produce a wide range of ground shaking intensities within the Shingle Springs area. The Shingle Springs area is subject to ground shaking from seismic activity on faults in both the Sierra Nevada Foothills and the San Francisco Bay Area. The project site is not within an identified fault zone. Faults in the area are related to the Foothills Fault Zone, which includes the Bear Mountain Fault Zone approximately two miles west of the project site and the Melones Fault Zone in the Sierra Nevada foothills located approximately six miles east of the project site.

Surface ground rupture during an earthquake is unlikely due to the distance of active faults from the project site. The primary earthquake hazards for the project site are the effects of ground shaking. Ground shaking may affect areas for hundreds of miles around a fault. Typical effects of maximum ground shaking include moderate structural damage to ordinary buildings, but negligible damage to buildings of good design and construction.

Soils

The National Resources Conservation Service (NRCS) identifies two soils within the project site (NCRS, 2020). These soil types are classified as Auburn very rocky silt loam 2-30% slopes (AxD), and Auburn very rocky silt loam, 30-50% slopes (AxE). Both have a low shrink-swell potential and a slight to moderate erosion hazard. Neither of these soil units are classified as hydric soils (NRCS, 2020). AxD consists is well-drained soil underlain by hard metamorphic rocks at approximately 12 to 26 inches. The soil is classified as gently sloping to moderately steep. Bedrock covers 5 to 25 percent of the surface. Depth of bedrock ranges from 12 to 26 inches, with as much as 25 percent of the soil mass consisting of gravel and cobblestone-size rock fragments. The texture of the upper surface (A horizon) layer is loam or silt loam, ranging in a thickness of 3 to 10 inches. There is a slight increase in clay content in the secondary (B horizon) layer, with the reactions measuring slightly acid or neutral. AxE is found in steep areas in the more prominent foothills and slopes that drop into creek channels and drainage ways. The soil unit is similar to the previously described AxD.

Regulatory Setting

Alquist–Priolo Earthquake Fault Zoning Act

California’s Alquist–Priolo Earthquake Fault Zoning Act requires the delineation of zones along active faults in California, in order to regulate development on or near active faults. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault

zones). No active faults have been mapped near the project site, and none of the nearest regional faults (Bear Mountain and Melones) are designated as an Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

California's Seismic Hazards Mapping Act (SHMA) directs the California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The California Geological Survey has not mapped any seismic hazard zones near the project site.

California Building Standards Code

The California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. CBC specifies criteria for open excavation, seismic design, and load-bearing capacity for construction in California.

3.5.2 Impact Analysis

A. Would the Project expose off-Reservation people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides?

Construction of the Project would be restricted to the existing Rancheria. The project site is not near an Alquist-Priolo Earthquake Fault Zone and no seismic hazard zones are mapped in the vicinity. As identified in Section 2.4, construction of the Project would comply with the CBC. Compliance with the CBC would ensure that the proposed structures would be constructed to withstand seismic ground shaking. No significant earth moving will be required for construction of the project and the development would not result in slopes that would be prone to failure during a seismic event. Potential impacts to off-Reservation people or structures from seismic-related ground failures is less than significant.

B. Would the Project result in substantial off-Reservation soil erosion or the loss of topsoil?

Construction of the Project would be restricted to the existing Rancheria. As addressed in Section 3.11, stormwater runoff from the Project would be conveyed to an existing subsurface drainage system on the Rancheria. This system would reduce storm flows to pre-development levels and would therefore not result in the scouring of drainages or erosion of topsoil off the Rancheria. Impacts to off-Reservation soil erosion would be less than significant.

3.6 HAZARDS AND HAZARDOUS MATERIALS

3.6.1 Setting

Environmental Setting

Database Searches

The State Water Resources Control Board maintains the Geotracker database, which contains records for sites that require cleanup, such as Leaking Underground Storage Tank Sites, Department of Defense Sites, and Cleanup Program Sites. There are no sites identified within one mile of the Project site in the Geotracker database (SWRCB, 2021).

The Department of Toxic Substances Control's (DTSC's) Envirostor database tracks cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further; this includes Federal Superfund sites, State Response sites, Voluntary Cleanup Sites, School Cleanup Sites, and Corrective Action Sites. There are no sites identified within one mile of the Project site in the Envirostor database (DTSC, 2021).

Schools

The closest schools to the Rancheria are the California Montessori Project and Buckeye Elementary School located approximately 1.5 miles from the Rancheria at the corner of Shingle Springs Drive and Buckeye Road.

Wildland Fire

Wildland fire protection on the Rancheria is provided by the Tribal Fire Department. The Tribal Fire Department has 10 permanent and 8-10 seasonal firefighters. Personnel meet qualifications of the National Incident Management System (NIMS) Wildland Fire Qualifications System, National Wildfire Coordinating Group (NWCG), and Bureau of Indian Affairs Incident Qualifications Card (Red Card) certification program. The Tribal Fire Department responds to incidents on the Rancheria and coordinates fuel reduction, prevention and suppression efforts.

Regulatory Setting

Hazardous materials and hazardous wastes are subject to extensive federal, state, and local regulations to protect public health and the environment. These regulations provide definitions of hazardous materials; establish reporting requirements; set guidelines for handling, storage, transport, and disposal of hazardous wastes; and require health and safety provisions for workers and the public.

Spill Prevention, Control, and Countermeasure Rule

USEPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR, Part 112) apply to facilities with a single above-ground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

Occupational Safety and Health Administration

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

California Health and Safety Codes

CalEPA has been granted primary responsibility by EPA for administering and enforcing hazardous materials management plans within California. CalEPA defines a hazardous material more generally than EPA as a material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released (26 CCR 25501).

State regulations include detailed planning and management requirements to ensure that hazardous materials are properly handled, stored, and disposed of to reduce human health risks. In particular, the State has acted to regulate the transfer and disposal of hazardous waste. Hazardous waste haulers are required to comply with regulations that establish numerous standards, including criteria for handling, documenting, and labeling the shipment of hazardous waste (26 CCR 25160 et seq.).

3.6.2 Impact Analysis

A. Would the Project create a significant hazard to the off-Reservation public or the off-Reservation environment through the routine transport, use, or disposal of hazardous materials?

Construction of the Project would involve the use of potentially hazardous materials, including vehicle fuels, oils, and transmission fluids. During the operation of the entertainment center, typical hazardous materials transported to and used at the site would include cleaning solvents, painting supplies, and petroleum products. However, all potentially hazardous materials used during construction or operation would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable federal, state, and local standards and regulations, which include requirements for disposal of hazardous materials at a facility licensed to accept such waste based on its waste classification and the waste acceptance criteria of the permitted disposal facilities. These potentially hazardous materials would be transported along roadways. Due to federal and state regulations that require proper containment and handling measures, as well as spill response and clean up, the potential for off-Reservation impacts related to hazardous materials transport is less than significant.

B. Would the Project create a significant hazard to the off-Reservation public or the off-Reservation environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Based on the search of the Geotracker and Envirostor databases, there are no identified releases of hazardous materials within or in proximity to the Project site. Thus, it is not anticipated that construction or operation of the Project would disturb any previous spills or leaks of hazardous

materials. As identified under impact criterion A above, the transportation of hazardous materials is subject to federal and state regulations for proper containment and handling. Therefore, impacts related to the release of hazardous materials would be less than significant.

C. Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed off-Reservation school?

As discussed under Section 3.3, the Project would not expose off-Reservation sensitive receptors to substantial pollutant concentrations. The Project would not handle acutely hazardous materials and the nearest off-Reservation school is located approximately 1.5 miles from the Rancheria. Impacts would be less than significant.

D. Would the Project expose off-Reservation people or structures to a significant risk of loss, injury or death involving wildland fires?

The Project site is a developed area with buildings, roads, parking areas and maintained landscape vegetation. The proposed entertainment center would not introduce land uses that have the potential to cause wildfires and would not restrict access for emergency response. As identified in Section 2.4, construction of the Project would comply with the CBC and the California Public Safety Code. Compliance with these codes includes safeguards from the hazards of fire, explosion or dangerous conditions, and provides safety and assistance to fire fighters and emergency responders. The Project's potential to expose off-Reservation people or structures to wildland fire risks would be less than significant.

3.7 LAND USE

3.7.1 Setting

Environmental Setting

The Project site is located on the Rancheria within western El Dorado County. The Project site is developed with the existing Red Hawk Casino and associated facilities, including parking garage, surface parking, roadways and landscaped areas. The surrounding area is primarily rural residential with 5 to 12-acre lots. The nearest residential uses are located approximately 400 feet to the west of the proposed entertainment center.

Regulatory Setting

El Dorado County General Plan

Land use on the Rancheria is exempt from local land use and zoning policies. Within the surrounding area, the El Dorado County General Plan is the primary land use policy. The General Plan designates the area surrounding the Rancheria as Low Density Residential. This designation provides for single-family residential development in a rural setting with parcel sizes ranging from 5 to 10 acres, with a maximum density of one dwelling unit per 5 acres. The Project area is also within the Biological Corridor overlay district. This overlay district applies to lands identified by El Dorado County as having high wildlife

habitat values because of extent, habitat function, connectivity, and other factors. Lands located within this overlay district are subject to additional land use restrictions including increased minimum parcel size, higher canopy-retention standards and/or different mitigation standards for oak woodlands, lower thresholds for grading permits, higher wetlands/riparian retention standards, increased riparian corridor and wetland setbacks and greater protection for rare plants.

El Dorado County Zoning Ordinance

The El Dorado County Zoning Ordinance implements the El Dorado County General Plan by classifying and regulating the uses of land and structures within unincorporated El Dorado County. The area surrounding the Rancheria is designated as Estate Residential (5 and 10-acre lots). This zone provides for residential and accessory agricultural and horticultural uses where there is sufficient space and natural conditions.

Regional Habitat Conservation Plans

The project area does not fall within the boundaries of any adopted HCP or natural community conservation plan.

3.7.2 Impact Analysis

A. Would the Project conflict with any off-Reservation land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?

Construction of the Project would be restricted to a previously developed portion of the Rancheria. No significant changes in existing land uses would occur. No off-Reservation infrastructure improvements would be required. As identified in Section 2.4, the Project would be constructed and operated in a manner that is generally consistent with relevant El Dorado County Ordinances. The environmental analysis provided in this document, including the analysis of potential air quality, noise and traffic impacts, uses local standards that apply within adjacent areas of unincorporated El Dorado County. No significant conflicts have been identified with off-Reservation plans, policies, or regulations related to avoiding or mitigating environmental effects. Impacts would be less than significant.

B. Would the Project conflict with any applicable habitat conservation plan or natural community conservation plan covering off-Reservation lands?

The Project does not fall within the boundaries of any adopted HCP or natural community conservation plan. There would be no conflict or impact with respect to conservation plans.

3.8 NOISE

3.8.1 Setting

Environmental Setting

Noise Fundamentals

Noise can be generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ears decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound. The term maximum sound level (L_{max}) is used to describe the highest sound level recorded during a noise event. However, the impact of noise is not a function of loudness alone; the time of day when noise occurs and the duration of the noise are also important.

A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise. The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 3-6 lists several examples of the noise levels associated with common situations.

Table 3-6
Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source : Caltrans, 2013.		

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In

general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Existing Noise Receptors

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses located west of the project site, across Koto Road.

Existing Ambient Noise Levels

The existing noise environment in the project area is defined primarily by HVAC noise from existing Red Hawk Casino facilities and vehicle traffic on Koto Road.

To quantify the existing ambient noise environment on the project site, Saxelby Acoustics conducted a continuous noise measurement survey. At the time of the noise level measurement, the casino was open to the public. The noise measurement locations are shown on **Figure 3-5**. A summary of the noise level measurement survey is provided in **Table 3-7**. **Appendix E** contains the complete results of the noise monitoring.



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 3-5
NOISE MEASUREMENT LOCATIONS

Table 3-7
Summary of Existing Background Noise Measurement Data

Site	Date	Average Measured Hourly Noise Levels, dBA						
		CNEL/L _{dn}	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm – 7:00 am)		
			L _{eq}	L ₅₀	L _{max}	L _{eq}	L ₅₀	L _{max}
Continuous 24-hour Noise Measurement Site								
LT-1	Saturday (4/10/2021)	71	69	56	92	64	54	86
	Sunday (4/11/2021)	71	67	55	93	65	55	88
LT-2	Saturday (4/17/2021)	63	60	52	82	56	48	78
	Sunday (4/18/2021)	62	57	48	80	56	49	78
Source: Appendix E (Saxelby Acoustics, 2020)								

Vibration Fundamentals

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Effects of Vibration on People and Buildings

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 3-8**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 3-8 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

Table 3-8
Effects of Vibration on People and Buildings

Peak Particle Velocity (in/second)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of “architectural” damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage.
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage.
Source: Caltrans, 2002.		

Regulatory Setting

Federal

There are no federal regulations related to noise that apply to the Project. Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

State

There are no state regulations related to noise that apply to the Project. The California Code of Regulations has guidelines for evaluating the compatibility of various off-Reservation land uses as a function of community noise exposure. The State also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

Local

The El Dorado County General Plan establishes maximum allowable noise exposure for sensitive land uses affected by transportation noise sources. **Table 3-9** below shows the El Dorado County Land Use Compatibility Chart.

Table 3-9
El Dorado County Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹ L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60 ³	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--
Notes: ¹ In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L _{dn} shall be applied at the building facade, in addition to a 60 dB L _{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L _{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L _{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement. ² As determined for a typical worst-case hour during periods of use. ³ Where it is not possible to reduce noise in outdoor activity areas to 60 dB L _{dn} /CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L _{dn} /CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. Source: El Dorado County General Plan, Table 6-1			

3.8.2 Impact Analysis

Thresholds of Significance

While projects located on the Rancheria are exempt from local noise-related standards and policies, a discussion of local noise standards and policies is appropriate for potential off-Reservation noise impacts. Specifically, the El Dorado County Code establishes noise standards for noise-sensitive land uses affected by transportation noise sources. Adjacent noise-sensitive single-family receptors are located within the unincorporated area of El Dorado County. Noise level thresholds and standards applied to studied receptors would be in accordance with the jurisdiction within which they are located and specified for reference within the impact analysis.

The El Dorado County General Plan outlines criteria for determination of significant impacts due to noise.

- Policy 6.5.1.12 When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.
- A. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant;
 - B. Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and
 - C. Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.

Methodology

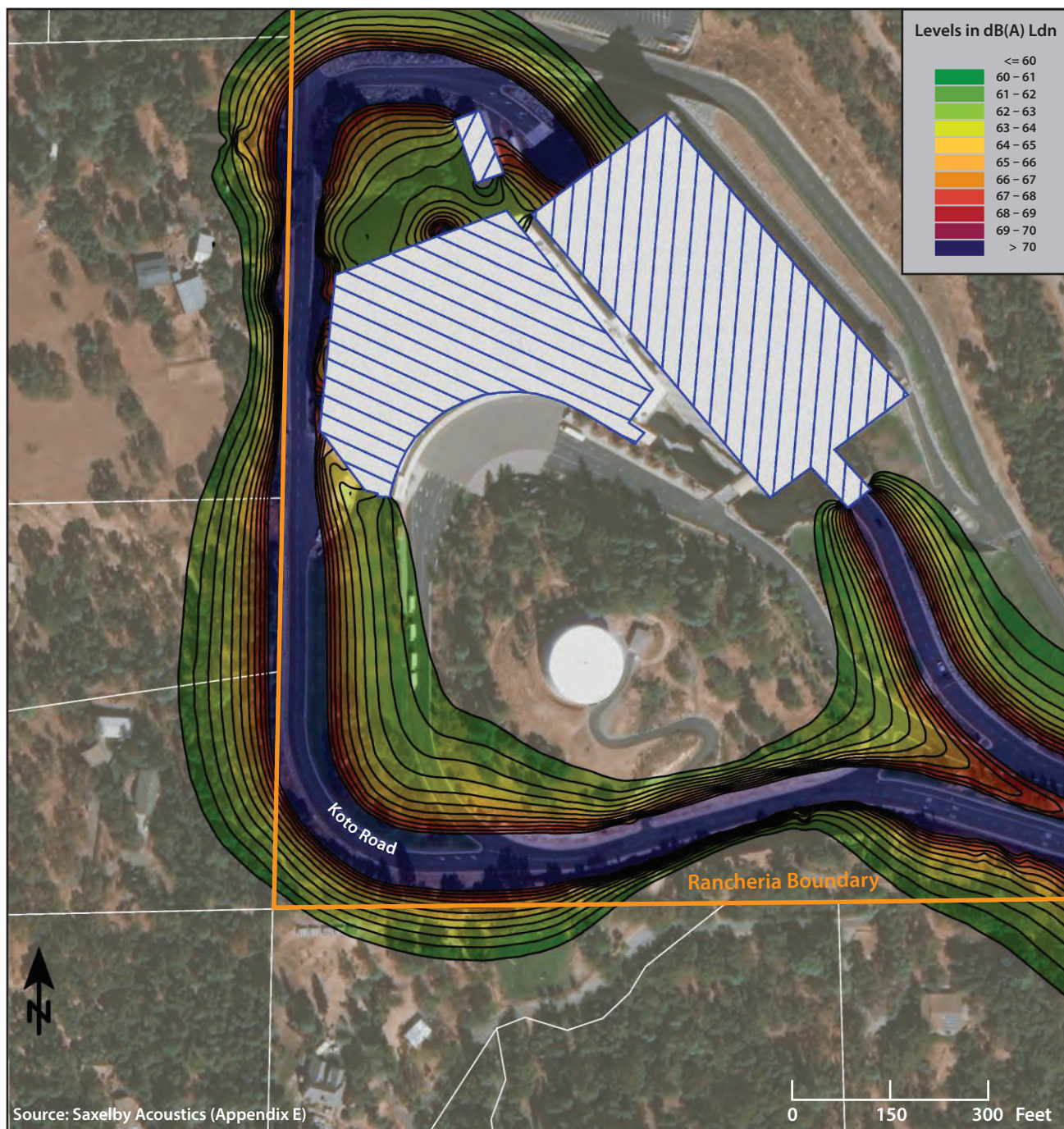
The Project would primarily include new indoor uses. Any outdoor mechanical equipment would be located on the roof of the new facility and would be shielded from view by rooftop parapets and is unlikely to be audible at the nearest off-site sensitive receptors which are located more than 300 feet to the west. The new facility and parking garage levels would also be shielded from the nearest uses to the west by the intervening existing casino building. Therefore, this analysis focuses primarily on traffic noise due to vehicle circulation on the perimeter road (Koto Road).

Off-Site Traffic Noise

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors with and without the proposed project for existing, baseline, and cumulative traffic conditions. Existing, baseline, and cumulative noise levels due to traffic were calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calvenno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn} , it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the traffic engineer, truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing, Baseline, and Cumulative conditions which would result from the project are provided in terms of L_{dn} .

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. **Figure 3-6** shows the predicted noise contours for the proposed entertainment center.



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 3-6
FUTURE WITH PROJECT NOISE CONTOURS

A. Would the Project expose off-Reservation persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Traffic Noise Increases

The El Dorado County General Plan specifies criteria to determine the significance of traffic noise impacts. Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in roadway noise levels is considered significant. The maximum Project-related increase in traffic noise at the nearest sensitive receptor is predicted to be 1.2 dBA as shown in **Table 3-10**. Since the existing noise levels due to traffic are above 65 dBA, an increase of 1.5 dBA or greater would be required to cause a significant impact. Therefore, impacts resulting from increased traffic noise are considered less than significant.

Table 3-10
Estimated Exterior Noise Level at Closest Sensitive Receptors

Condition	Koto Road*	Red Hawk Parkway
Existing	70.6 dBA	50.4 dBA
Existing + Project	71.8 dBA	51.5 dBA
Change	1.2 dBA	1.0 dBA
Baseline **	70.9 dBA	50.8 dBA
Baseline + Project	72.1 dBA	51.7 dBA
Change	1.1 dBA	0.9 dBA
Cumulative	71.1 dBA	51.0 dBA
Cumulative + Project	72.2 dBA	51.9 dBA
Change	1.1 dBA	0.9 dBA
Notes: * Applies to entire segment of Koto Road along the Rancheria boundary. ** Baseline includes Existing plus Approved Project (EPAP) traffic as identified in Appendix F. This includes future hotel traffic. Source: Appendix E (Saxelby Acoustics, 2020)		

Construction Noise

During the construction of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 3-11**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet.

Table 3-11
Typical Construction Equipment Noise Levels

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: FHWA, 2006.	

The nearest residential uses are located approximately 600 feet to the west of the entertainment center site, as measured from the center of the construction of the entertainment center. At this distance, maximum construction noise levels would be in the range of 35-49 dBA L_{eq} and 55-69 dBA L_{max} at the nearest residential uses. Construction of the recycled water tanks in the northern portion of the Rancheria could involve equipment that could generate maximum noise levels shown in Table 3-11. Construction noise could exceed the County's construction noise level limits, as outlined in Table 6-5 of the County's General Plan, shown below in **Table 3-12**. However, as stated in the County General Plan Policy 6.5.1.11 and Chapter 130.37 of the County Code, the standards outlined in Table 6-5 do not apply to noise levels generated by construction activity that occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends and on federally recognized holidays. As identified in Section 2.4, exterior construction activity would be restricted to these hours. While daytime construction noise is exempt under the County policies, **Mitigation Measure NO-1** has been identified to minimize noise levels due to construction activities. Construction noise impacts would be less than significant.

Table 3-12
El Dorado County Maximum Construction Noise Standards

Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 am–7 pm	50	60
	7 pm–10 pm	45	55
	10 pm–7 am	40	50
Source: El Dorado County General Plan, Table 6-5 Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Rural Regions—Construction Noise.			

Mitigation Measure NO-1

To minimize disturbance to adjacent residential land uses, the project contractor shall ensure that the following construction noise BMPs are met on-site during all phases of construction:

- All equipment driven by internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed “package” equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Construction staging areas shall be established at locations that would create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.
- Construction site and access road speed limits shall be established and enforced during the construction period.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- Project-related public address or music systems shall not be audible at any adjacent receptor.
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.
- The construction contractor shall designate a “noise disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

B. Would the Project expose off-Reservation persons to excessive groundborne vibration or groundborne noise levels?

Development of the project may result in typical construction-related vibration. Because the entertainment center and expanding parking garage would be developed on the existing parking garage, most earth moving and compaction impacts would be avoided. However, operation of some equipment could generate vibration. **Table 3-13** shows vibration levels from typical construction equipment.

Table 3-13
Vibration Levels of Typical Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026
Source: FTA, 2006.			

The Table 3-13 data indicate that construction vibration levels anticipated for the Project are less than the 0.2 in/sec threshold at distances of 26 feet. The closest residence which could be impacted by construction related vibrations, is located approximately 75 feet from the proposed construction activities. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would occur during normal daytime working hours. Off-Reservation persons would not be exposed to excessive groundborne vibration or associated groundborne noise levels. Impacts would be less than significant.

C. Would the Project result in a substantial permanent increase in ambient noise levels in the off-Reservation vicinity of the project?

As identified under impact criterion A above, operational traffic noise levels at the nearest sensitive receptor are predicted to increase by a maximum of 3.0 dBA. According to El Dorado County guidelines, the existing noise levels due to traffic are less than 60 dBA, an increase of 5.0 dBA or greater would be required to cause a significant impact. Therefore, impacts resulting from increased traffic noise would be considered less than significant.

D. Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the off-Reservation vicinity of the project?

As identified under impact criterion A above, Project construction would result in temporary increases in ambient noise levels at the nearest sensitive receptor. Noise levels may periodically exceed the

maximum construction noise standards (Table 3-9). However, El Dorado County General Plan Policy 6.5.1.11 exempts the construction of a project as long as construction occurs between hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally-recognized holidays. As identified in Section 2.4, construction would be limited to these hours. Implementation of Mitigation Measure NO-1 would minimize disturbance to adjacent residential land uses during construction. Based on El Dorado County policies, the temporary or periodic increase in ambient noise levels in the off-Reservation vicinity of the project would be less than significant.

3.9 PUBLIC SERVICES

3.9.1 Setting

Fire Protection and Emergency Medical

The El Dorado County Fire Protection District provides fire protection to the Rancheria and Red Hawk Casino. Station 28 is located at 3860 Ponderosa Road in Shingle Springs approximately four miles from the Project site. The station is staffed 24 hours a day, 7 days a week by an engine company that is staffed with three firefighters and two emergency medical technicians (EMTs) (Cordero 2020, pers. comm.). Volunteers and off-duty personnel staff other apparatus housed at Station 28 when there is a need for additional response.

Wildland fire protection on the Rancheria is provided by the Tribal Fire Department.

Emergency medical services are provided by Tribal EMTs and by the El Dorado County Fire Protection District. Medical care is provided locally by Marshall Hospital in Placerville, approximately eight miles from the Rancheria. In addition, emergency medical service is also available in nearby Sacramento County at Mercy Hospital in Folsom (16 miles), the Kaiser Permanente Medical Center in Sacramento (33 miles), and the U.C. Davis Medical Center in Sacramento (35 miles).

Police Protection

Public safety to the Red Hawk Casino is currently provided by casino security staff, Tribal Police and the El Dorado County Sheriff's Office (EDSO). When incidents occur, both the Tribal Police Department and the EDSO are contacted, and both agencies respond. The County Sheriff's Office is located 6 miles east of the site at 200 Industrial Drive, Placerville, CA. A Sheriff's sub-station is located 10 miles west off Latrobe Road at 4355 Town Center Drive, El Dorado Hills, CA. The West Slope Patrol Unit of the EDSO has 2 lieutenants, 8 sergeants and 50 deputies (EDSO, 2020). Services are provided to the Rancheria under a memorandum of understanding between El Dorado County and the Tribe. The Tribe also contracts with the California Highway Patrol for traffic control services.

Schools

The Rancheria is primarily located within the Mother Lode Union School District, which provides elementary and middle school education, and the El Dorado Union High School District. The Mother Lode Union School District includes the Indian Creek Elementary School at 6701 Green Valley Road in Placerville and the Herbert C. Green Middle School at 3781 Forni Road in Placerville. The El Dorado Union High School is located at 4675 Missouri Flat Road in Placerville.

Parks and Public Facilities

El Dorado County has many parks and public facilities that provide for local and regional recreational opportunities. County parks include Bradford park in Shingle Springs, Henningsen Lotus Park in Lotus, Pioneer Park in Somerset, Forebay Park in Pollock Pines, and Joe's Skate Park in Placerville. Major outdoor recreational areas include the South Fork American River (whitewater trips) in the Coloma area, El Dorado County Trail (rail trail) in the Placerville area, and the Rubicon Trail (4x4 trail) from Georgetown to Lake Tahoe. El Dorado National Forest covers most of the eastern portion of the County.

3.9.2 Impact Analysis

A. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for off-Reservation fire protection and emergency medical services?

Structural fire protection and emergency medical services would continue to be provided to the Red Hawk Casino by the El Dorado County Fire Protection District. Station 28 in Shingle Springs serves the Rancheria. The station was built in 2008 to hold two companies; however, it currently only has one company. The station has ample space for staff and equipment if an additional company is required in the future. Accordingly, providing service to the Project is not expected to result in the need to expand the existing station or build new facilities (Cordero 2020, pers. comm.). The Project would not result in physical impacts associated with the provision of new or physically altered off-Reservation fire protection and emergency medical services facilities. Impacts would be less than significant.

B. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for off-Reservation police protection?

Law enforcement services would continue to be provided to the Red Hawk Casino by the Tribal Police Department and EDSO. EDSO has determined that the Sheriff's Office would not have to build new office space or expand existing office space to accommodate service to the proposed facility (Stelz 2020, pers. Comm). The Project would not result in physical impacts associated with the provision of new or physically altered off-Reservation police protection facilities. Impacts would be less than significant.

C. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for off-Reservation schools?

As discussed in Section 3.1.2, the Project is not anticipated to induce population growth; thus, the Project is not anticipated to increase demands on off-Reservation school facilities. This impact is considered to be less than significant.

D. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered off-Reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for off-Reservation parks or other public facilities?

As discussed in Section 3.1.2, the Project is not anticipated to induce population growth; thus, the Project is not anticipated to increase demands on off-Reservation parks or other public facilities. This impact is considered to be less than significant.

3.10 TRANSPORTATION AND TRAFFIC

3.10.1 Setting

Environmental Setting

Existing Roadways

Highway 50

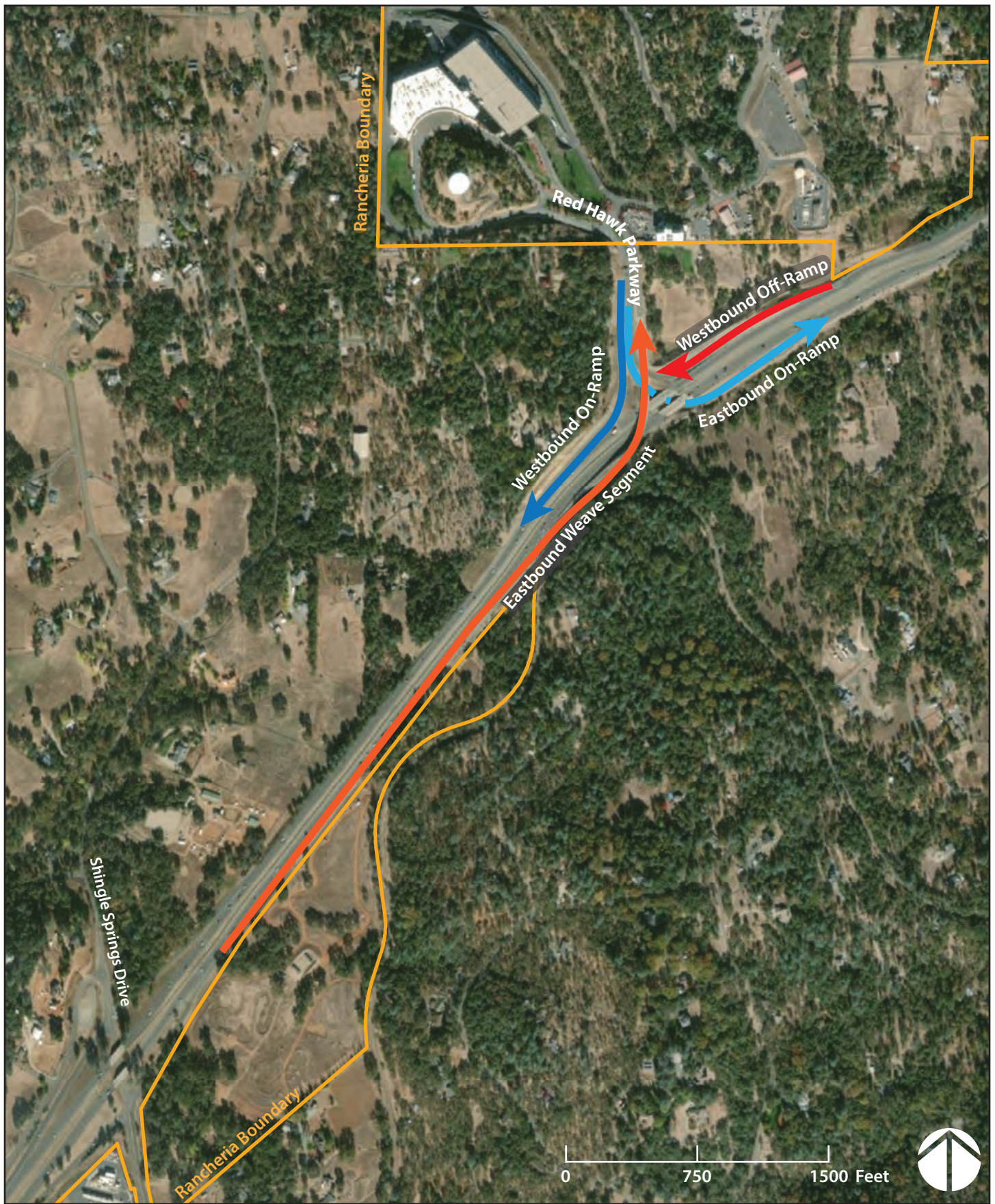
Highway 50 is an east-west freeway which provides regional access between Sacramento and Placerville and recreational areas within the southern Lake Tahoe area. In the vicinity of the Red Hawk Parkway interchange, Highway 50 has two lanes in each direction (with an eastbound auxiliary lane west of the interchange to Shingle Springs Drive), 10 ft. paved outside shoulders and 5 ft. paved inside shoulders, and a 70 ft. wide grassy median.

Red Hawk Parkway

Red Hawk Parkway provides sole access to the Red Hawk Casino via a Highway 50 interchange (**Figure 3-8**). The interchange serves only the Rancheria itself on the northside of the freeway via an eastbound off-ramp flyover bridge to the Rancheria, an eastbound on-ramp passing beneath the flyover bridge and Highway 50, and standard westbound ramps. All four ramps are single lanes merging together to form a 4-lane segment of Red Hawk Parkway.

Public Transit

El Dorado Transit (EDT) operates buses throughout El Dorado County. In the vicinity of the site bus service is available with one route serving two stops on the Rancheria, one at the Health and Wellness Center and the other at the casino. The #50X is an express route between Placerville and Folsom. EDT operates thirteen trips, Monday through Friday from 6:00 a.m. to 6:00 p.m. Westbound typically stops at the Red Hawk Casino occur at 10 minutes after the hour, at 6:10 a.m. through 6:10 p.m. For eastbound trips, the first stop usually occurs at 8:41 a.m., and recurs each hour until 6:41 p.m. The final run, leaving the Iron Point Light Rail stop in Folsom at 6:48 p.m., makes a stop at the casino on request. Currently, the bus stop at Red Hawk Casino is not accessible until 8:00 a.m. and is closed at 4:00 p.m. The Health and Wellness Center can be used as an alternative stop.



SHINGLE SPRINGS BAND OF MIWOK INDIANS

FIGURE 3-7
STUDY AREA ROADWAYS

Pedestrian and Bicycle Facilities

Traffic on Highway 50 is limited to motor vehicles; however, sidewalks and bike lanes are present on the Rancheria.

Existing Conditions

Study Area

The study area includes the off-Reservation roadways that provide access to the project site and would likely be affected by Project traffic volumes. Because of the proximity of the project site to Highway 50, the study area is limited to the freeway ramps and mainline Highway 50 at Red Hawk Parkway.

The traffic-related effects of the Project on freeway ramp junctions were assessed for this traffic impact study. Ramp junctions that would serve as major access routes, and would be affected by project-related traffic, were analyzed. The following ramp junctions were analyzed under 2020 and 2040 conditions without and with the Project:

- Highway 50 at Red Hawk Parkway westbound on-ramp merge
- Highway 50 at Red Hawk Parkway westbound off-ramp diverge
- Highway 50 at Red Hawk Parkway eastbound on-ramp merge
- Highway 50 Mainline Eastbound weave segment between Shingle Springs Drive and Red Hawk Parkway;

The Highway 50 eastbound “off-ramp” was analyzed as a weave segment rather than an off-ramp diverge because an auxiliary lane exists between Shingle Springs Drive and Red Hawk Parkway. As a result, the auxiliary lane feeds directly on to Red Hawk Parkway.

The following Highway 50 segments were analyzed under 2020 and 2040 conditions without and with the Project:

- Highway 50 Westbound Mainline at Red Hawk Parkway; and
- Highway 50 Eastbound Mainline at Red Hawk Parkway.

One intersection is located at the entrance to the casino, at Honpie Road. This intersection is internal to the Rancheria and provides a direct access to Highway 50 for the casino and Rancheria traffic which includes residents, offices and medical facilities. This intersection was not studied as the traffic volumes along Honpie Road during the study periods are negligible.

Level of Service Analysis

Level of Service analysis was employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service (LOS) measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions. The guidelines and analyses used for this report follow El Dorado County and Caltrans standards.

Local agencies adopt minimum Level of Service standards for their facilities. El Dorado County identifies LOS E as the acceptable Level of Service on roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Centers and Rural Regions except

as specified in the General Plan. The County's General Plan allows some roadway segments to operate at LOS F. None of these roadways are included in this analysis. County policy notes that impacts to Caltrans facilities shall use Caltrans LOS standards and significance thresholds. Caltrans uses LOS E as the significance threshold on freeway facilities in this area of El Dorado County. The analysis techniques presented in the *2010 Highway Capacity Manual* were used to calculate Level of Service and to provide a basis for describing existing traffic conditions and evaluating the significance of project traffic impacts.

The study periods considered for this analysis included the peak hour of mainline traffic, the peak hour of the ramp junctions and the peak periods when total traffic (inbound plus outbound) is expected to be generated by the combined entertainment components of the expansion. The Friday PM peak hour analysis period studied was between 6:00 and 7:00 p.m., while the Saturday PM peak hour analysis period studied was between 5:00 and 6:00 p.m.

Hourly traffic data was obtained from the Caltrans Performance Measurement System (PeMS). PeMS is a real-time Archive Data Management System for transportation data. It collects raw detector data in real-time and can be used to analyze the performance of the freeway system. The baseline traffic volumes used for this analysis was a Friday and Saturday in mid-November 2019. These volumes used were prior to Covid-19 closures, which has reduced traffic volumes along all roadway facilities.

Freeway Segments and Ramp Junction Level of Service Analysis Procedures

The Level of Service associated with freeway segments and ramp terminals is described in terms of the vehicle density (i.e., passenger cars / lane / mile). HCS7 software was used to analyze these locations.

Freeway mainline segment and ramp junction areas were analyzed for this traffic impact study using methods described in the Highway Capacity Manual, 6th Edition (Transportation Research Board 2016). McTrans HCS7 Highway Capacity Software was used to perform the LOS calculations for this traffic impact study.

The analysis of these facilities involves calculating the density of vehicles on a freeway facility, expressed as passenger cars per mile per lane. The LOS designation is based on the vehicle density. **Table 3-14** presents the relationship of vehicle density to LOS for freeway segments while **Table 3-15** presents the relationship of vehicle density to ramp junctions.

Table 3-14
Freeway Segment Level of Service Criteria

Level of Service	Vehicle Density	Operating Characteristics
A	≤ 11	Describes free-flow operation. Vehicles are almost completely unimpeded in their ability to maneuver.
B	$>11 \times \leq 18$	Ability to maneuver is slightly restricted.
C	$>18 \times \leq 26$	Flow with speeds at or near the free flow speed. Freedom to maneuver is noticeably restricted.
D	$>26 \times \leq 35$	Speeds begin to decline and density begins to increase; ability to maneuver with traffic stream more noticeably restricted.
E	$>35 \times \leq 45$	Operation at capacity. Virtually no usable gaps in traffic stream. Vehicles are closely spaced, leaving little room to maneuver within traffic stream at speeds > 49 mph.
F	>45	Breakdown in vehicular flow.

Table 3-15
Freeway Ramp Merge/Diverge Level of Service Criteria

Level of Service	Vehicle Density	Operating Characteristics
A	≤ 10	Represents unrestricted operations. Density is low enough to permit smooth merging and diverging, with virtually no turbulence in traffic stream.
B	$>10 \times \leq 20$	Merging and diverging maneuvers become noticeable to through drivers, and minimal turbulence occurs. Merging drivers must adjust speeds to accomplish smooth transitions from acceleration lane to freeway.
C	$>20 \times \leq 28$	Speed within influence area declines as turbulence levels become noticeable. Ramp and freeway vehicles begin to adjust speeds to accomplish smooth transitions.
D	$>28 \times \leq 35$	Turbulence levels in influence area become intrusive; virtually all vehicles slow to accommodate merging and diverging traffic. Some ramp queues may form at heavily used on-ramps, but freeway operations remain stable.
E	>35	Conditions approach capacity. Speeds reduce significantly and turbulence is felt by virtually all drivers. Flow levels approach capacity and small changes in demand and/or disruption within traffic stream can cause both ramp and freeway queues to form.
F	Demand exceeds capacity	Demand exceeds capacity. Substantial disruption and queuing are present.

Freeway Ramp Weaving Level of Service Analysis

Weaving sections were analyzed using the Leisch Method which is described in Chapter 500 of the Caltrans Highway Design Manual. The Leisch Method uses weaving charts to determine the level of service for the weaving volumes for the length of the weaving section. The level of service for the total volume over all lanes of the weaving section is then found from the panels within the chart.

Freeway Segment Levels of Service

Freeway mainline traffic at the Red Hawk Parkway interchange was obtained from the PeMS website.

Table 3-16 presents a summary of the existing Friday p.m. and Saturday p.m. study period LOS along the freeway. Both eastbound and westbound directions currently operate within the Caltrans threshold, at LOS C or better.

Table 3-16
Existing Freeway Mainline Levels of Service

Location	Direction	PM Friday		PM Saturday	
		Density	LOS	Density	LOS
Highway 50 At Red Hawk Parkway	Westbound	12.0	B	23.3	C
	Eastbound	16.8	B	13.5	B
Notes: Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: KD Anderson, 2020 (Appendix F)					

Freeway Ramp Junction Levels of Service

Freeway ramp volumes were available as part of the ramp intersection information in the PeMS website. **Table 3-17** presents a summary of the existing Friday p.m. and Saturday p.m. study period LOS at the four ramp junctions. All on- and off-ramps currently operate at LOS C or better.

Table 3-17
Existing Ramp Levels of Service

Ramp Junction	PM Friday				PM Saturday			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
Red Hawk Parkway Highway 50 EB Off-Ramp	Off-ramp LOS calculated as part of weaving analysis							
Red Hawk Parkway Highway 50 EB On-Ramp	1604	75	18.1	B	1023	85	13.0	B
Red Hawk Parkway Highway 50 WB Off-Ramp	1215	74	13.2	B	2343	132	24.5	C
Red Hawk Parkway Highway 50 WB On-Ramp	1141	209	14.2	B	2211	397	25.2	C
Notes: WB = westbound. EB = eastbound Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: KD Anderson, 2020 (Appendix F)								

Freeway Weaving Section Levels of Service.

The eastbound off-ramp was calculated as part of the weaving section between the Shingle Springs Road and Red Hawk Parkway interchanges. Ramp data on the eastbound Shingle Springs Road on-ramp was not available from PeMS. A review of the areas north and south of the interchange shows the area is

rural. A 12-vehicle fueling position (VFP) gas station with convenience store is located in the southwest quadrant of the Shingle Springs Road interchange. Based on the 10th Edition of ITE *Trip Generation*, a 12 VFP gas station with convenience store would generate about 116 outbound trips during the Saturday peak hour of the site; the midweek PM peak of the site would generate about 95 outbound trips. Most of these trips would be distributed onto both eastbound and westbound Highway 50. Based on this traffic generator and the local area a conservative estimate of 100 vehicles was assumed to use the eastbound on-ramp towards Red Hawk Parkway during both study periods.

Table 3-18 presents the existing Friday p.m. and Saturday p.m. study period LOS within the weaving section. Under existing conditions, the weaving section operates at LOS A during both study periods.

Table 3-18
Existing Peak Hour Weaving Levels of Service

Location	Direction	PM Friday	PM Saturday
		LOS	LOS
Highway 50 West of Red Hawk Parkway	Eastbound	A	A
Note: Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm)			
Source: KD Anderson, 2020 (Appendix F)			

Existing Plus Approved Projects Conditions

The Tribe intends to construct a 150-room hotel adjacent to the existing casino. The hotel project was approved previously and is assumed to be completed by the time the proposed entertainment center is in operation. Trip generation rates for the hotel was obtained from *Trip Generation*. A time of day distribution provided in *Trip Generation* was used to establish inbound and outbound traffic for the study periods, and these volumes were added to the existing conditions.

Freeway Segment Levels of Service

Table 3-19 presents a summary of the Existing Plus Approved Projects (EPAP) Friday p.m. and Saturday p.m. study period LOS along the freeway. Both eastbound and westbound directions would operate within the Caltrans threshold, at LOS C or better.

Table 3-19
EPAP Freeway Mainline Levels of Service

Location	Direction	PM Friday		PM Saturday	
		Density	LOS	Density	LOS
Highway 50 At Red Hawk Parkway	Westbound	12.2	B	23.6	C
	Eastbound	17.0	B	13.9	B
Notes: Density expressed in passenger cars per mile per lane.					
Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm)					
Source: KD Anderson, 2020 (Appendix F)					

Freeway Ramp Junction Levels of Service

Table 3-20 presents a summary of Friday p.m. and Saturday p.m. study period LOS at the four ramp junctions. All on- and off-ramps would operate at LOS C or better.

Table 3-20
EPAP Ramp Levels of Service

Ramp Junction	PM Friday				PM Saturday			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
Red Hawk Parkway Highway 50 EB Off-Ramp	Off-ramp LOS calculated as part of weaving analysis							
Red Hawk Parkway Highway 50 EB On-Ramp	1604	80	18.1	B	1023	93	13.0	B
Red Hawk Parkway Highway 50 WB Off-Ramp	1222	81	13.3	B	2353	142	24.6	C
Red Hawk Parkway Highway 50 WB On-Ramp	1141	228	14.3	B	2211	428	25.5	C
Notes: WB = westbound. EB = eastbound Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: KD Anderson, 2020 (Appendix F)								

Freeway Weaving Section Levels of Service

The Leisch Method was used to determine the levels of service in the weaving section along Highway 50.

Table 3-21 presents a summary of the EPAP study period LOS within the weaving section. Under EPAP conditions, the weaving section would operate at LOS A during both Friday and Saturday p.m. study periods.

Table 3-21
EPAP Peak Hour Weaving Levels of Service

Location	Direction	PM Friday	PM Saturday
		LOS	LOS
Highway 50 West of Red Hawk Parkway	Eastbound	A	A
Note: Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: KD Anderson, 2020 (Appendix F)			

Regulatory Setting

Congestion Management Program

The purpose of the state-mandated Congestion Management Program (CMP) is to monitor roadway congestion and assess the overall performance of the region's transportation system. The El Dorado

County Transportation Commission is not required to prepare a CMP because El Dorado County is below the 200,000 population requirement.

El Dorado County General Plan

The Transportation and Circulation Element of the El Dorado County General Plan provides the framework for decisions in El Dorado County concerning the countywide transportation system. The Circulation Element sets forth goals and policies describing the overall mobility program for the county. The Transportation and Circulation Element identifies Level of Service standards for County-maintained roads and state highways within the unincorporated areas of the county. These standards are identified in Section 3.10.2.

3.10.2 Impact Analysis

The development of the Project would attract additional traffic to the project site. The amount of additional traffic on a particular section of the roadway network is dependent upon two factors:

Trip Generation, the number of new trips generated by the project, and

Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip Generation

Trips corresponding to the bowling alley and sports bar were established using trips rates and directional distributions published in Trip Generation (Institute of Transportation Engineers, 10th Edition, 2017) based on the projected use. A 25% internal capture of casino/hotel guests was assumed.

Trip Generation does not provide trip generation rates for the other proposed uses within the expansion, thus other methodologies were used to establish trip generation characteristics for the other uses.

Trips corresponding to the go-kart track were established using trip generation rates established by Formula 1 Karting Ltd. along with Saturday pm peak hour field observations of the K1 Speed all-electric indoor go-kart racing in Sacramento. A 25% internal capture of casino/hotel guests was assumed.

Trips corresponding to the various virtual reality suites were derived based on planned capacities, turnover based on maximum session lengths, conservative occupancy rate assumptions, and one assumed trip (inbound or outbound) per person. A 25% internal capture of casino/hotel guests was assumed.

Trips corresponding to the event rental meeting rooms were established using trip rates established via research of average occupancies typical for the variety of uses typical of hotel conference rooms. It is assumed conference rooms would have a higher internal capture than the entertainment components of the expansion, thus a 50% internal capture of casino/hotel guests was assumed for these rooms.

Table 3-22 identifies the trip generation used in the analysis. **Appendix F** provides additional details on how the trip generation was estimated.

Table 3-22
Project Trip Generation

Land Use Description	Quantity	Trip Generation Rate		Total Trips	
		Friday 6-7 pm	Saturday 5-6 pm	Friday 6-7 pm	Saturday 5-6 pm
Bowling Alley	26 lanes	4.50	2.41	117	63
Go Cart	40 carts	0.73	0.73	30	30
Virtual Reality	204 people	1.00	1.00	204	204
Meeting Rooms	250 people	0.30	0.30	75	75
Sports Bar	7,000 sq.ft.	11.36	11.36	80	80
Sub-total Trips				506	452
Directional Splits				In	Out
Bowling Alley				97	20
Go Cart				15	15
Virtual Reality Gaming/Golf				102	102
Event Rental Meeting Rooms				38	37
Sports Bar				53	27
Sub-total Trips				305	201
Internal Trip Reductions					
Bowling Alley		25%	(24)	(5)	(6)
Go Cart		25%	(4)	(4)	(4)
Virtual Reality Gaming/Golf		25%	(26)	(26)	(26)
Event Rental Meeting Rooms		50%	(19)	(19)	(19)
Sports Bar		25%	(13)	(7)	(13)
Sub-total Internal Trip Reduction			(86)	(61)	(68)
Total Net Trips				In	Out
				219	140
				359	319
Source: Larry Wymer Traffic Engineering, 2020 (Appendix F)					

The Project is expected to generate 359 net new trips during the Friday p.m. peak hour, of which 219 would be inbound and 140 outbound. The Project is expected to generate 319 net new trips during the Saturday p.m. peak hour, of which 165 would be inbound and 154 outbound.

Trip Distribution

The distribution of project traffic was developed based upon the historic daily volume data provided in the PeMS reports. Friday traffic appears to be split about 70% to and from the west with 30% to and from the east. Saturday traffic is split 80% west and 20% east. Under project conditions, and based on the existing traffic volumes, an 80% / 20 % split was used for both study periods. This places most project traffic onto the freeway ramps that have higher volumes under existing conditions.

El Dorado County Thresholds of Significance.

As previously noted, El Dorado County identifies LOS 'E' as the acceptable Level of Service on roadways and state highways within the unincorporated areas of the County in the Community Regions and LOS D in the Rural Centers and Rural Regions except as specified in the General Plan. The *2010 Highway Capacity Manual* (HCM) was used to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts.

A traffic impact is considered to be significant under El Dorado County guidelines if the project causes an intersection to change from LOS E to LOS F. Worsening of conditions at facilities already operating at unacceptable levels of service is also considered a significant impact. The County's General Plan Policy TC-Xe defines worsen as any of the following conditions:

- a. a 2% increase in traffic during the a.m. peak hour, p.m. peak hour or daily trips, or
- b. the addition of 100 or more daily trips, or
- c. the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

A. Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-Reservation circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Roadway Level of Service Impacts

The evaluation of impacts to the study area roadways addresses the addition of Project traffic to the EPAP conditions. As discussed in Section 3.10.1, the EPAP conditions include traffic from a planned hotel at the existing casino.

Freeway Segment Levels of Service

Table 3-23 presents a summary of the EPAP plus Project Friday p.m. and Saturday p.m. study period LOS along the freeway. Both eastbound and westbound directions would operate within the Caltrans threshold, at LOS C or better.

Table 3-23
EPAP plus Project Freeway Mainline Levels of Service

Location	Direction	PM Friday		PM Saturday	
		Density	LOS	Density	LOS
Highway 50 At Red Hawk Parkway	Westbound	11.9	B	22.4	C
	Eastbound	19.5	C	15.8	B
Notes: Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: Larry Wymer Traffic Engineering (Appendix F)					

Freeway Ramp Junction Levels of Service

Project traffic volumes were added to the EPAP ramp volumes. **Table 3-24** presents a summary of Friday p.m. and Saturday p.m. study period LOS at the ramp junctions. All on- and off-ramps would continue to operate at LOS C or better.

Table 3-24
EPAP plus Project Ramp Levels of Service

Ramp Junction	PM Friday				PM Saturday			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
Red Hawk Parkway Highway 50 EB Off-Ramp	Off-ramp LOS calculated as part of weaving analysis							
Red Hawk Parkway Highway 50 EB On-Ramp	1604	107	18.7	B	1023	123	13.5	B
Red Hawk Parkway Highway 50 WB Off-Ramp	1264	123	14.1	B	2384	173	25.5	C
Red Hawk Parkway Highway 50 WB On-Ramp	1141	337	15.5	B	2211	548	27.0	C
Notes: WB = westbound. EB = eastbound Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: Larry Wymer Traffic Engineering (Appendix F)								

Freeway Weaving Section Levels of Service

The Leisch Method was used to determine the levels of service in the weaving section along Highway 50. **Table 3-25** presents the summary of the EPAP plus Project study period LOS within the weaving section. Under EPAP conditions, the weaving section would operate at LOS B during the Friday p.m. study period and LOS A during the Saturday p.m. study period.

Table 3-25
EPAP Peak Hour Weaving Levels of Service

Location	Direction	PM Friday	PM Saturday
		LOS	LOS
Highway 50 West of Red Hawk Parkway	Eastbound	B	A
Note: Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm)			
Source: Larry Wymer Traffic Engineering (Appendix F)			

Public Transit

As described in Section 3.10.2, Red Hawk Casino is served by the #50X express bus operated by EDT. The Project would not disrupt operation of #50X express bus or otherwise adversely impact operation of public transit services. Impacts would be less than significant.

Pedestrian and Bicycle Facilities

Highway 50 provides sole access to the Red Hawk Casino via Red Hawk Parkway. Traffic on Highway 50 is limited to motor vehicles. No pedestrian or bicycle facilities are located on Highway 50. Accordingly, no off-Reservation pedestrian or bicycle facilities would be impacted by the Project. No impacts would occur.

Construction Traffic

Construction of the entertainment center would occur over an approximately 12-month period. Construction-related traffic impacts could occur from: increases in automobile traffic associated with construction workers, increases in truck traffic associated with import and export of fill and the delivery of construction materials, and reduction in roadway capacity and access associated with roadway improvements.

Worker and Truck Traffic

During construction there would be an increase in traffic associated with construction workers and the delivery of construction materials. The amount of worker traffic would vary with the phases of construction but is expected to peak at 210 worker trips (105 inbound and 105 outbound) per day. Workers typically arrive at the site prior to 7:00 a.m. and leave before 4:00 p.m. for an 8-hour shift. This puts most worker trips outside of the morning and afternoon commuter peak periods. All worker parking would be accommodated on the Rancheria.

Truck traffic associated with the delivery of construction materials would also vary with the phases of construction. Truck deliveries are expected to peak at 82 trips (41 inbound and 41 outbound) per day. Because the Project would be built on the existing parking garage, no grading would be required, and no import and export of fill would be required. As a result, the project would not generate haul truck traffic. Deliveries of construction materials would occur through the workday (between 7 a.m. and 7 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on weekends and federally recognized holidays). Most deliveries would occur outside of the morning and afternoon commuter peak periods.

Using a passenger car equivalency (PCE) of 2.0, the 82 round truck trips would be equivalent to 164 daily PCE trips. When combined with the 210 worker trips, total construction traffic is expected to peak at 374 PCE-adjusted daily trips. For the purposes of this analysis, it is assumed that 25 percent of these daily trips (94 trips) would occur during a peak hour. As shown in Table 3-22, during operation there would be a total of 359 project trips within the Friday p.m. peak hour. Thus, the construction of the Project would generate significantly fewer trips than operation of the Project.

Access

During the construction phase, access to and from the existing casino and parking garage would be maintained. No roadwork is required on or off the Rancheria and no disruption in emergency access would occur.

Impact Conclusion

All study area roadways would continue to operate at acceptable levels of service under Project conditions. The Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-Reservation circulation system. Impacts would be less than significant.

B. Would the Project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated off-Reservation roads or highways?

As described in Section 3.10.2, El Dorado County does not have a congestion management program. Accordingly, the Project would not conflict with a congestion management program. No impacts would occur.

C. Would the Project substantially increase hazards to an off-Reservation design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project would not increase hazards to an off-Reservation design feature or introduce incompatible uses. As identified under impact question A above, all study area roadways would continue to operate at acceptable levels of service under EPAP plus Project conditions. Impacts would be less than significant.

D. Would the Project result in inadequate emergency access for off-Reservation responders?

The Project would not disrupt emergency access on or off the Rancheria. Emergency access would be maintained through the construction process. As identified under impact question A above, all study area roadways would continue to operate at acceptable levels of service under EPAP plus Project conditions and no delays or disruptions of emergency access would occur. Impacts would be less than significant.

3.11 UTILITIES AND SERVICE SYSTEMS

3.11.1 Setting

Environmental Setting

Water Supply

The El Dorado Irrigation District (EID) provides water to the Rancheria via a 3-inch meter located in the southeastern portion of the Rancheria. This meter supplies the Red Hawk Casino, Health and Wellness Center, and homes and Tribal offices on the Rancheria. Within the Rancheria, water is delivered by a water system that is owned and operated by the Tribe independently of EID. EID supplies water in accordance with a 2013 Memorandum of Understanding (MOU) between the Tribe and EID. Under the 2013 MOU, EID agreed to provide an average of 135,000 gallons per day (gpd) at a maximum flow of 95 gallons per minute (gpm). EID modified a standard 3-inch water meter to physically restrict the flow to 95 gpm. The EID supply system is separated from the internal Rancheria system by an air gap and backflow preventer. Water from the EID meter is delivered by the Rancheria system to a 500,000-gallon storage reservoir located at the southeastern portion of the Rancheria. Water is delivered through the Rancheria by a system of pipelines that is completely independent of the EID delivery system.

In order to meet future demand, EID is planning system improvements and expansion of its existing surface water diversions. In 2013, EID prepared an Integrated Water Resources Master Plan to address maintenance of its existing infrastructure and the need for new facilities to meet future demand. The Recommended Plan, which was adopted by EID in 2013, includes two new water supply components, the White Rock Diversion, which would divert water within the upper American River watershed to a new water treatment plant located near Placerville, and Alder Reservoir proposed on Alder Creek within the upper American River watershed. In addition to these two major proposed projects, the Recommended Plan also includes new and upgraded water conveyance facilities, expansion of water treatment plants, and expanded treated water reservoirs. These improvements will be developed in phases in accordance with the growth in water demand (EID, 2013).

The Rancheria is located within EID's Western/Eastern Supply Area. In 2019, EID estimated that it had an available supply of 36,000 acre-feet of water to serve this area. The estimated water demand of this area was 27,299 acre-feet, leaving approximately 8,701 acre-feet unallocated. EID converts the unallocated amount to Equivalent Dwelling Units (EDUs) to estimate the availability of new water meters that can be issued. In 2019, EID estimated a total of 21,593 available and unallocated EDUs in the Western/Eastern Supply Area (EID, 2019).

Wastewater

Wastewater on the Rancheria is treated at a wastewater treatment plant (WWTP) that is owned and operated by the Tribe and located in the southeast corner of the Rancheria. All wastewater generated on the Rancheria (including the Red Hawk Casino, health center, and homes) is routed to the WWTP by force mains located within the roads on the Rancheria. The membrane bioreactor plant produces disinfected tertiary recycled water as defined by California Department of Health Regulations (Title 22 California Code of Regulations). Under California Title 22 Regulations, allowed uses of disinfected

tertiary recycled water include lawn and garden irrigation (including edible crops), flushing toilets, cleaning roads and sidewalks, and firefighting.

Recycled water produced at the WWTP is reused on the Rancheria, providing landscape irrigation for the casino, health center and residential areas, and toilet flushing at the casino. An average of 103,647 gpd is reused in this manner. The remaining recycled water is disposed on the Rancheria via leachfields, drip fields and spray fields. A 3-million-gallon seasonal storage tank provides for the storage of recycled water during winter when rain events temporarily preclude the use of the sprayfields. **Table 3-26** provides a summary of the existing wastewater treatment and disposal capacity and the 2019 average day wastewater inflow. Flow data after 2019 has not been used due to lower flows as the result of COVID-19.

Table 3-26
Tribal Wastewater Treatment and Disposal Design Capacity & Inflow

Wastewater Treatment Plant Capacity	Gallons Per Day
Design Average Day Flow	175,000
Design Peak Day Flow	225,000
Design Peak Weekend Flow	350,000
Wastewater Treatment Plant Inflow	
2019 Average Day Inflow	102,000
2019 Peak Day Inflow	143,000
Wastewater Disposal Capacity	
Leachfields	79,400
Spray Fields	163,562
Drip Fields	14,795

Stormwater Drainage

The existing stormwater drainage system at the Red Hawk Casino uses a system of underground chambers below the employee parking lot to retain and infiltrate storm flows from the casino, parking garage and roads. The underground chambers provide treatment of storm flows, using catch basins, sediment/oil separators, and infiltration through subsurface soils to protect water quality. The drainage system also provides flood protection by limiting runoff to pre-development levels.

3.11.2 Impact Analysis

A. Would the Project exceed off-Reservation wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Wastewater generated by the proposed entertainment center would be treated at the Tribe's wastewater treatment plant located on the Rancheria. The plant produces disinfected tertiary recycled water as defined by Title 22 California Code of Regulations. Recycled water would be used within the

toilets of the proposed entertainment center and for landscape irrigation. The remaining recycled water would be disposed on the Rancheria within the existing leachfields and sprayfields. The Project would not require off-Reservation treatment of wastewater. No impacts would occur.

B. Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant off-Reservation environmental effects?

As described under impact question A above, wastewater treatment would occur on the Rancheria and no off-Reservation wastewater treatment facilities would be required. Development of the Project and the planned hotel would require the construction of additional storage tanks. Currently, there is one 3-million-gallon recycled water storage tank on the hill near the casino. This provides seasonal storage of recycled water when wetter winter conditions reduce the ability to use the spray fields and reduce landscape irrigation demand. The development of the Project and the planned hotel would require approximately 2 additional seasonal storage tanks. These tanks would be developed within the northern portion of the Rancheria.

Water for the Project would be supplied by EID through the existing service to the Rancheria. The Project's estimated peak water demand is summarized in **Table 3-27**. Recycled water would be used for toilet flushing and landscape irrigation, accounting for an estimated 18.5 percent reduction in water usage. The average daily Project water demand would be approximately 22,000 gpd.

Table 3-27
Project Water Demand

Component	Average Daily Water Demand (gpd)	Average Daily Water Demand (gpm)
Entertainment Center	27,000	18.8
Recycled Water Use	5,000	3.5
Net Project Water Demand	22,000	15.3
Source: HydroScience Engineers, 2021.		

As noted above, water service to the Rancheria is provided through a 3-inch water meter that was modified to restrict the flow to 95 gpm. Currently, average daily water use peaks at approximately 75 gpm during August and September. The Project could increase water demand by approximately 15.3 gpm. With water demand from the planned hotel factored in (estimated at approximately 14 gpm), water use on the Rancheria would be expected to reach or exceed the 95 gpm limitation. To provide adequate water supply to the hotel and Project, the Tribe would apply to EID for an increase in water delivery from EID. Once granted, the existing meter would be modified to allow increased flow. The existing 3-inch meter can deliver a continuous flow of 250 gpm, which exceeds the foreseeable water demand on the Rancheria.

Based on the average water demand, the Project has an estimated water demand of 22 acre-feet per year (afy). The Project water demand is equal to 57 EDUs (EID defines an EDU in the Western/Eastern Supply Area as 0.39 afy). In 2019, EID estimated a total of 21,593 available and unallocated EDUs in the

Western/Eastern Supply Area (EID, 2019). Because of this available capacity, development of the Project is not expected to require new or expanded facilities to provide water. No off-Reservation improvements would be required to provide adequate water service to the Rancheria. Impacts would be less than significant.

C. Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant off-Reservation environmental effects?

As described in Section 2.3, stormwater runoff from the proposed entertainment center would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. This system provides treatment of stormwater and reduces storm flows to pre-development levels. Development of the entertainment center and expansion of the parking garage would not increase storm flows as the area of impervious surfaces would not increase. No off-Reservation stormwater drainage facilities would be developed. No impacts would occur.

D. Would the Project result in a determination by an off-Reservation wastewater treatment provider (if applicable), which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Wastewater from the Project would be treated, reused and disposed on the Rancheria. No off-Reservation wastewater treatment would be needed. No impacts would occur.

3.12 WATER RESOURCES

3.12.1 Setting

Environmental Setting

Regional Climate

Average annual precipitation for the region is approximately 38 inches per year (Western Regional Climate Center, 2021). Summers are hot and dry, and winters are cool and moist. A majority of the annual precipitation falls between the months of November and April.

Surface Hydrology

The Project area is located within the South Fork American River Watershed as identified by the EPA. The Project site is situated within the smaller sub-watershed of Weber Creek. Weber Creek drains an approximate watershed area of 97.6 square miles and feeds into the South Fork American River above the Folsom Reservoir. The Rancheria drains to Dry Creek and Slate Creek, which is a tributary of Dry Creek, which in turn flows into Weber Creek north of the town of Rescue.

Site drainage for the existing casino, parking garage and associated roadways is provided by a subsurface drainage system below the surface parking lot north of the casino. This system provides treatment of stormwater and reduces storm flows to pre-development levels.

Flooding

The applicable Flood Insurance Rate Map (FIRM) for the site is Community Panel Number 06017C0750 E. This map was published by the Federal Emergency Management Agency (FEMA) in 2008. The Rancheria, is classified as Zone D. This area is classified as an area of undetermined, but possible flood hazard. The surrounding area is mapped Zone X, which is defined by FEMA as an area determined to be outside the 0.2% annual chance floodplain. The nearest FEMA-mapped flood hazard area is along Dry Creek approximately one mile north of the Rancheria. Because the Rancheria is surrounded by Zone X and does not have any significant streams, the Rancheria is not expected to contain any 1% annual chance floodplains. The project site currently has no drainage problems and no downstream drainage impediments.

Groundwater

The primary mechanism for water storage and movement in the project area is within the structure of the soil and the joint systems in the rocks. Groundwater in this region resides in fractures in the underlying bedrock. The occurrence and geometry of the fractures dictate the flow patterns within the rocks. Some rainfall will infiltrate the soil and be made available to plants and to the air for evapotranspiration, and a portion will reach the lower permeability rock layer beneath the soils. At this point, the water will flow through the soil along the soil-rock boundary until a rock fracture conducts the water into the underlying rock or until the soil becomes too thin to support the flow, forming a seasonal spring. The availability of groundwater in these fractured rock formations is variable and can be quite limited.

Water Quality

Land use largely affects surface water quality, with both point source and nonpoint-source discharges contributing contaminants to surface waters. Water quality in the South Fork American River Watershed is generally good; however, the river is listed on the EPA's Clean Water Act Section 303(d) list of impaired water bodies for mercury because of historical mining activities.

Regulatory Setting

Clean Water Act

The federal Clean Water Act (CWA) (33 USC § 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Important sections of the Act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Act.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program also extends to non-point source discharges,

including storm water discharges from certain sites, and is administered by the State Water Resources Control Board (SWRCB) and applicable Regional Water Quality Control Board (RWQCB), as discussed in the State section below.

- Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the USACE and the EPA.

NPDES Waste Discharge Regulations

The federal CWA established the NPDES program to protect the water quality of receiving waters. Under the CWA, the EPA is required to establish technology based effluent limitations for point sources that are to be incorporated into NPDES permits. In addition, NPDES permits must be consistent with applicable state water quality standards. Under the CWA, Section 402, discharging pollutants to receiving waters is prohibited unless the discharge is in compliance with an NPDES permit.

NPDES Construction General Permit

Construction projects disturbing one or more acres of soil must be covered under the NPDES general permitting process. For tribal projects on trust land, the contractor proposing the project must apply for coverage under the EPA's Construction General Permit. The EPA's Construction General Permit also requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must list BMPs that address stormwater runoff rates and quality.

National Flood Insurance Program

In response to increasing costs of disaster relief, Congress passed the National Flood Insurance Act (NFIP) of 1968 and the Flood Disaster Protection Act of 1973. The purpose of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. The Federal Emergency Management Agency (FEMA) administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues flood insurance rate maps (FIRMs) for communities participating in the NFIP. A FIRM is the official map of a community prepared by FEMA to delineate both the special flood hazard areas and the flood risk premium zones applicable to the community.

El Dorado County Grading, Erosion, and Sediment Control Ordinance

The El Dorado County Grading, Erosion, and Sediment Control Ordinance (Grading Ordinance) (Chapter 110.14 of the County Code) establishes provisions for public safety and environmental protection associated with grading activities on private property. The Grading Ordinance prohibits grading activities that would cause flooding where it would not otherwise occur or would aggravate existing flooding conditions. Pursuant to the ordinance, the design of the drainage facilities in the county must comply with the County of El Dorado Drainage Manual (Drainage Manual) (El Dorado County 1995).

County of El Dorado Drainage Manual

The Drainage Manual (1995) requires drainage systems to be designed on a site-specific basis in accordance with the findings of technical studies and County requirements. The Drainage Manual provides for no net increase in peak stormwater discharge relative to pre-development conditions to

ensure that 100-year flooding and its potential impacts are maintained at or below current levels and that people and structures are not exposed to additional flood risk.

3.12.2 Impact Analysis

A. Would the Project violate any water quality standards or waste discharge requirements?

Construction

Grading, excavation, and other construction-related activities could cause soil erosion at an accelerated rate during storm events. However, because the proposed facilities would be developed on the existing parking garage, no grading would be required, and other ground disturbing activities would be limited. Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment. Construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons, to on-site channels. However, all potentially hazardous materials used during construction would be contained, stored, and used and handled in compliance with applicable federal, state, and local standards and regulations. As identified in Section 2.4, the Project would be constructed in a manner that is generally consistent with El Dorado County's Grading Ordinance which prohibits degradation of water quality from construction sites. Due to the incorporation of these provisions, potential water quality impacts would be less than significant.

Operation

Wastewater generated by the proposed entertainment center would be treated at the Tribe's wastewater treatment plant located on the Rancheria. The existing wastewater treatment plant complies with EPA's federal requirements. The plant produces disinfected tertiary recycled water as defined by Title 22 California Code of Regulations. Recycled water would be used within the toilets of the proposed entertainment center and for landscape irrigation. The remaining recycled water would be disposed on the Rancheria within the existing leachfields and sprayfields. Recycled water would not discharge to surface waters.

As described in Section 2.3, stormwater runoff from the proposed entertainment center and expanded parking garage would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. This system provides treatment of stormwater and reduces storm flows to pre-development levels. Development of the entertainment center and expansion of the parking garage would not increase storm flows as the area of impervious surfaces would not increase. Use of the subsurface drainage system would remove sediment and oil from stormwater and would ensure that the Project would not violate water quality standards or waste discharge requirements. Impacts would be less than significant.

B. Would the Project substantially deplete off-Reservation groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the

production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The Project would not use groundwater for water supply. Water would be supplied by EID, which obtains its supply solely from surface water sources. Stormwater from the Project would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. The drainage system allows for the percolation of stormwater on the Rancheria, allowing for groundwater recharge. Impacts to off-Reservation groundwater supplies would be less than significant.

C. Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation off-site?

The Project would be developed in an upland area and would not alter the course of any drainage channels or streams. Stormwater runoff from the proposed entertainment center would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. This system provides treatment of stormwater and reduces storm flows to pre-development levels. If required to reduce peak flow to the existing system, underground detention or vegetated surface detention basins would be developed adjacent to the entertainment center. Expansion of the parking garage would not increase storm flows as the area of impervious surfaces would not increase. The Project would not increase the rate or amount of stormwater runoff and would not otherwise increase erosion or siltation off the Rancheria. Impacts would be less than significant.

D. Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?

As discussed under impact question C above, the Project would not alter the course of any drainage channels or streams and would not increase the rate or amount of stormwater runoff leaving the Rancheria. The Project would not increase flooding off-site. Impacts would be less than significant.

E. Would the Project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff off-Reservation?

As discussed under impact question A and C above, the Project would not increase the rate or amount of stormwater runoff leaving the Rancheria. During construction, water quality would be protected through compliance with the El Dorado County's Grading Ordinance. During operation, stormwater would be treated through the subsurface drainage system. The Project's impacts to the quantity and quality of runoff water would be less than significant.

F. Would the Project place within a 100-year flood hazard area structures, which would impede or redirect off-Reservation flood flows?

The Project would be developed in upland areas approximately one mile from the nearest 100-year flood hazard area. The Project would not impede or redirect off-Reservation flood flows. No impacts would occur.

G. Would the Project expose off-Reservation people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The Project does not include the construction of a levee or dam. No impacts would occur.

Chapter 4

OTHER CONSIDERATIONS

4.1 SIGNIFICANT EFFECTS WHICH CANNOT BE AVOIDED

A significant effect which cannot be avoided is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level. The off-Reservation impacts of the Project are summarized in Table ES-1, within the Executive Summary of this TEIR. Table ES-1 identifies the impacts and any mitigation measures required to reduce or avoid significant impacts. All of the impacts of the Project would be less than significant or would be mitigated to a less-than-significant level.

4.2 IRREVERSIBLE SIGNIFICANT EFFECTS

An Irreversible significant effect is one that would cause a substantial adverse effect on the environment through the use of nonrenewable resources; changes in land uses that commit future generations to similar uses; or irreversible damage from environmental accidents, pollution, or other impacts. This evaluation considers the irretrievable commitment of resources through the construction and operation of the proposed facilities.

The Project would expand the existing Red Hawk casino by adding an entertainment center and providing additional parking. The Project would not result in the conversion of existing land uses as the project site is already developed. No roads, utility or other infrastructure improvements would be developed that could lead to secondary resource impacts off-Reservation.

Construction of the Project would result in the use of non-renewable natural resources such as sand and gravel, asphalt, steel, copper, and other metals. Operation of the Project would require the use of electricity generated from renewable sources as well as from nuclear, hydro, and natural gas. As discussed in Section 2.4, the Project would be designed and constructed to comply with the CBC, including the California Green Building Standards (CALGreen). CALGreen specifies energy, water, and resource efficiency requirements for new buildings. As a result, the nonrenewable resources consumed for the Project would be comparable to the use of resources for other commercial projects within California.

The Project would result in additional vehicle trips from patrons and staff. The additional trips would contribute to the regional emissions of ozone precursors, particulate matter, and other pollutants. These air quality emissions are discussed in detail in Section 3.3 and were found to be less than significant based on local thresholds.

4.3 GROWTH-INDUCING EFFECTS

A growth-inducing effect may occur when a project fosters economic or population growth, removes obstacles to growth (through the extension of infrastructure to a previously unserved area), or facilitates other activities that could significantly affect the environment. This analysis considers whether the Project would directly or indirectly induce growth in the surrounding area.

4.3.1 Economic and Population Growth

An objective of the Project is to strengthen and sustain economic development on the Rancheria. The Project would achieve this by adding an entertainment center to the existing Red Hawk Casino. The Project is expected to expand and diversify the economic base for the Tribe. However, the Project is not expected to significantly induce economic growth in the surrounding area, which is primarily rural residential without direct access to Red Hawk Parkway. It is expected that businesses currently serving the Red Hawk Casino (e.g. restaurant suppliers, linen services) would have some growth in service demand. Affected businesses are located throughout the region and such growth is not expected to result in additional economic or population development beyond that assumed in regional land use and transportation plans.

The Project does not include the direct development of housing. Nor would the Project induce significant indirect housing growth. As described in Section 3.1, within the context of the regional labor force, the additional jobs created by the Project are not expected to induce population growth in the area. The increase in jobs is expected to be filled by the existing labor force. The Project would result in a less-than-significant growth-inducing impact.

4.3.2 Removal of an Obstacle to Growth

The Project would expand the existing Red Hawk Casino by adding an entertainment center and providing additional parking. The Project would not directly result in the conversion of existing land uses as the project site is already developed. The Project does not include roadway, utility, or other infrastructure improvements that would facilitate development in the surrounding area. As such, the Project would not remove an obstacle to growth in the surrounding area. The Project would result in a less-than-significant growth-inducing impact.

4.3.3 Other Potential Growth

The Project does not represent a precedent-setting action such as changing an existing land use or requiring amendment of land use plans. The Project would not induce unanticipated growth beyond that identified in the El Dorado County General Plan. The Project would result in a less-than-significant growth-inducing impact.

4.4 CUMULATIVE IMPACTS

Cumulative impacts refer to the effects of a project that are individually limited but cumulatively considerable off-Reservation. “Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past, current, or probable future projects.

4.4.1 Cumulative Setting

The assessment of impacts tasks into account the “cumulative environment” which is defined by other projects that may contribute to the Project’s environmental impacts within the same geographic area. The geographic boundaries of the cumulative effects zone have been determined by the nature of the resources affected and the distance that effects may travel. As an example, increased sedimentation of waterways that result from a project are limited to the watershed in which they occur. As a result, it is only necessary to examine incremental effects within that watershed. Air quality emissions from a project, however, travel over far greater distances and therefore necessitate analysis on the air basin. For this analysis, the geographic boundaries of the cumulative effects zone are generally that of western El Dorado County, although for some resources (water, biological etc.) smaller natural or cultural boundaries are used.

The means of establishing projects that may contribute to environmental conditions in the region is the growth assumptions of the El Dorado County General Plan. The 2013-2021 Housing Element of the General Plan was adopted in 2013. The Housing Element incorporates California Department of Finance (CDOF) population projections, which estimated a population of 203,095 in 2020 and 220,384 in 2030. Using a baseline 2010 population of 180,921, it was expected that the county population would increase 18 percent between 2010 and 2025. The current CDOF estimate on the county’s population is 193,227 (DOF, 2020a). CDOF projects that the county’s population will increase to 201,041 in 2025 and 207,496 in 2030 (DOF, 2020b). Based on current CDOF estimates, the county’s population will increase by approximately 7.4 percent between 2020 and 2030.

In addition to the general growth addressed in the General Plan, the cumulative analysis also takes into account the Tribe’s proposed hotel. The planned hotel will have 150 rooms and will be located directly south of the existing casino, as shown in Figure 2-1.

4.4.2 Cumulative Impacts

Aesthetics

Cumulative visual impacts that may occur as the region grows include the loss of scenic vistas or the aesthetic quality of views in the region as residential and commercial development replaces the natural landscape. The Project would expand commercial development in an area of the Rancheria that is substantially shielded from public viewpoints by topography and vegetation. The only public viewpoint is from a small portion of Highway 50 south of the Rancheria (Figure 3-1). However, this area is so small that a passing motorist would only have a momentary sideways glimpse of the structure. The proposed entertainment center and expanded parking garage would be noticeable from some off-Reservation residential areas, with the area north of the Rancheria having the clearest view of the development. With implementation of **Mitigation Measure AES-1** (planting of screening trees), impacts to scenic vistas would be less than significant. Due to the limited visibility of the site from public areas and

incorporation of mitigation to reduce visual impacts to the off-Reservation residential areas, the Proposed Action's contribution to cumulative visual resource impacts is considered to be less than significant.

Air Quality and Greenhouse Gas Emissions

Cumulative development in the Mountain Counties Air Basin will include land and roadway development that has the potential to impact air resources. Cumulative air quality impacts will occur if projects in the region cause exceedances of the State or National Ambient Air Quality Standards. Section 3.3 addresses the potential air quality and GHG emission impacts of the Project. The analysis in Section 3.3 specifically addresses potential cumulative emissions of criteria pollutants and greenhouse gas emissions. With implementation of **Mitigations Measures AQ 1 – AQ3** (compliance with El Dorado AQMD mitigation measures, and GHG BMPs), the Project would not result in a significant contribution to cumulative air quality or GHG impacts.

Biological Resources

As development occurs in the region, natural habitat will be impacted. Cumulative impacts to biological resources include the fragmentation and loss of oak woodlands, wetlands, riparian vegetation, and other important wildlife habitat. Such habitat loss could impact special-status species and nesting birds that depend on such habitat and could limit the ability of animals to move through the region. Compliance with federal, state, and local regulations will reduce habitat loss by restricting the areas where development may occur and requiring mitigation of habitat impacts; however, some cumulative loss of habitat will nevertheless occur. The Project would not directly impact special-status species or modify natural habitat which could support special-status species because the proposed area of development is already cleared of natural habitats, graded, and maintained as landscaping and roadways. All construction activities would be located on the Rancheria and would be limited to upland areas that contain no wetlands or other jurisdictional waters of the United States. As identified in Section 2.4, the Project would be constructed in a manner that is generally consistent with El Dorado County's Grading Ordinance which prohibits degradation of water quality from construction sites, thereby avoiding potential impacts to downstream surface waters. Potential impacts to nesting birds would be addressed with implementation of **Mitigation Measures BIO-1** (tree removal done outside of nesting period, pre-construction surveys, etc.). The Proposed Action's contribution to cumulative biological resource impacts is considered to be less than significant.

Geology and Soils

Cumulative development in the region will include land and roadway development necessary to accommodate the County's planned growth for this area. Such development will increase the potential for seismic hazards, erosion, and topsoil loss. The Project would not result in significant contributions to these potential impacts. Construction of the Project would be restricted to the existing Rancheria and the project site is not near an Alquist-Priolo Earthquake Fault Zone or other mapped seismic hazard. As identified in Section 2.4, construction of the Project would comply with the CBC. Compliance with the CBC would ensure that the proposed structures would be constructed to withstand seismic ground shaking. As addressed in Section 3.11, stormwater runoff from the Project would be conveyed to an existing subsurface drainage system on the Rancheria. This system would reduce storm flows to pre-development levels and would therefore not result in the scouring of drainages or erosion of topsoil off

the Rancheria. Cumulative impacts to geology and soils are therefore considered to be less than significant.

Hazards and Hazardous Materials

As cumulative development occurs in the region, the potential exists for land and roadway development projects to increase hazardous material impacts on public health and the environment. Impacts can occur as the result of the improper use and disposal of hazardous materials, or through contact with existing hazardous materials encountered during construction. Based on database searches, there are no identified releases of hazardous materials within or in proximity to the project site. Thus, it is not anticipated that construction or operation of the Project would disturb any previous spills or leaks of hazardous materials. The nearest off-Reservation school is located approximately 1.5 miles from the Rancheria and would not be impacted by construction or operation of the Project. All applicable federal, state and local regulations pertaining to the use, transportation and disposal of hazardous materials would be followed during construction and operation. The Project's contribution to cumulative hazardous material impacts would be less than significant.

Land Use

Cumulative development in the region will include land and roadway development necessary to accommodate the County's planned growth for this area. Such development will increase the potential loss of habitat and other environmental effects such as increased air quality, noise, and traffic impacts. Construction of the Project would be restricted to a previously developed portion of the Rancheria. No significant changes in existing land uses would occur. As identified in Section 2.4, the Project would be constructed and operated in a manner that is generally consistent with relevant El Dorado County Ordinances. The environmental analysis provided in this document, including the analysis of potential air quality, noise and traffic impacts, uses local standards that apply within adjacent areas of unincorporated El Dorado County. No significant conflicts have been identified with off-Reservation plans, policies, or regulations related to avoiding or mitigating environmental effects. The Project's contribution to cumulative land use impacts would be less than significant.

Noise

Cumulative development in western El Dorado County would result in localized noise level increases. These may occur along roadways where traffic levels increase or in neighborhoods where urban uses are expanding or intensifying. As addressed in Section 3.8, the increases in traffic noise under cumulative conditions would not exceed El Dorado County significance criteria. Construction of the proposed facilities would result in short-term increases in noise in the vicinity of the project site. While daytime construction noise is exempt under the County policies, **Mitigation Measure NO-1** requires implementation of construction noise BMPs to minimize noise levels. The Project would not result a cumulatively considerable contribution to noise impacts.

Public Services

As development occurs in the region, demands for public services will increase. The expansion of public services may result in environmental impacts associated with the construction of new or expanded public service facilities. As addressed in Section 3.8, no additional police protection, fire protection, emergency medical services facilities would be required to serve the Project. As discussed in Section

3.1.2, the Project is not anticipated to induce population growth; thus, the Project is not anticipated to increase demands on off-Reservation school facilities, parks, or other public facilities. The Project's contribution to cumulative public service impacts is considered to be less than significant.

Transportation and Traffic

The analysis of cumulative impacts addresses freeway segment, weaving and ramp junction levels of service, transit service, and pedestrian and bicycle facilities. The cumulative level of service analysis is based on 2040 volume forecasts using the most recent countywide regional travel demand forecasting model.

Freeway Segment Levels of Service

Table 4-1 presents a summary of the cumulative plus Project Friday p.m. and Saturday p.m. study period LOS along the freeway. Both eastbound and westbound directions would operate within the Caltrans threshold, at LOS C or better.

Table 4-1
Cumulative 2040 plus Project Freeway Mainline Levels of Service

Location	Direction	PM Friday		PM Saturday	
		Density	LOS	Density	LOS
Highway 50 At Red Hawk Parkway	Westbound	12.8	B	24.3	C
	Eastbound	23.3	C	21.4	C
Note: Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: Larry Wymer Traffic Engineering (Appendix E)					

Freeway Ramp Junction Levels of Service

Project traffic volumes were added to the cumulative ramp volumes. **Table 4-2** presents a summary of Friday p.m. and Saturday p.m. study period LOS at the ramp junctions. All on- and off-ramps would continue to operate at LOS C or better, with the exception of the westbound on-ramp which would operate at LOS D.

Freeway Weaving Section Levels of Service

Table 4-3 presents the summary of the cumulative plus Project study period LOS within the weaving section along Highway 50. Under cumulative conditions, the weaving section would operate at LOS B during both the Friday and Saturday p.m. study periods.

Table 4-2
Cumulative plus Project Ramp Levels of Service

Ramp Junction	PM Friday				PM Saturday			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
Red Hawk Parkway Highway 50 EB Off-Ramp	Off-ramp LOS calculated as part of weaving analysis							
Red Hawk Parkway Highway 50 EB On-Ramp	1975	112	22.1	C	1591	125	18.7	B
Red Hawk Parkway Highway 50 WB Off-Ramp	1362	132	15.1	B	2569	186	27.4	C
Red Hawk Parkway Highway 50 WB On-Ramp	1230	359	16.5	B	2383	570	28.7	D
Notes: WB = westbound. EB = eastbound Density expressed in passenger cars per mile per lane. Friday PM peak hour (6:00 – 7:00 pm) & Saturday PM peak hour (5:00 – 6:00 pm) Source: Larry Wymer Traffic Engineering (Appendix E)								

Table 4-3
Cumulative Peak Hour Weaving Levels of Service

Location	Direction	PM Friday	PM Saturday
		LOS	LOS
Highway 50 West of Red Hawk Parkway	Eastbound	B	B
Source: Larry Wymer Traffic Engineering (Appendix E)			

Public Transit

As described in Section 3.10.2, Red Hawk Casino is served by the #50X express bus operated by EDT. The Project would not disrupt operation of #50X express bus or otherwise adversely impact operation of public transit services.

Pedestrian and Bicycle Facilities

Highway 50 provides sole access to the Red Hawk Casino via Red Hawk Parkway. Traffic on Highway 50 is limited to motor vehicles. No pedestrian or bicycle facilities are located on Highway 50. Accordingly, no off-Reservation pedestrian or bicycle facilities would be impacted by the Project.

Impact Conclusion

All study area roadways would continue to operate at acceptable levels of service under cumulative plus Project conditions. The Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-Reservation circulation system. The Project's contribution to cumulative transportation and traffic impacts would be less than significant.

Utilities and Service Systems

As development occurs in the region, demands for utility and service systems will increase. The expansion of public services may result in environmental impacts associated with the construction of new or expanded water, wastewater, stormwater facilities. As addressed in Section 3.11, wastewater generated by the proposed entertainment center would be treated at the Tribe's wastewater treatment plant located on the Rancheria. The Project would not require off-Reservation treatment of wastewater. Water for the Project would be supplied by EID through the existing service to the Rancheria. Development of the Project is not expected to require new or expanded facilities to provide water. Stormwater runoff from the Project would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. No off-Reservation stormwater drainage facilities would be developed. The Project's contributions to cumulative utility and service system impacts would be less than significant.

Water Resources

Cumulative growth in the region will result in increased impervious surfaces and septic systems which will increase potential sedimentation, pollution, and stormwater flows in the South Fork American River Watershed. As addressed in Section 3.12, wastewater generated by the proposed entertainment center would be treated at the Tribe's wastewater treatment plant located on the Rancheria. The plant produces disinfected tertiary recycled water as defined by Title 22 California Code of Regulations. Recycled water would be used within the toilets of the proposed entertainment center and for landscape irrigation. The remaining recycled water would be disposed on the Rancheria within the existing leachfields and sprayfields. Recycled water would not discharge to surface waters. Stormwater runoff from the Project would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. Use of the subsurface drainage system would remove sediment and oil from stormwater and would ensure that the Project would not violate water quality standards. The Project would be developed in an upland area of the Rancheria and would not alter the course of any drainage channels or streams. In addition, the Tribe would be required to implement a SWPPP and erosion control plan during construction of the Project. The Project's contribution to cumulative water resource impacts would be less than significant.

4.5 ALTERNATIVES

The intent of alternatives analysis is to identify alternatives to the project that meet project objectives while reducing or avoiding the significant impacts of the project. As described in Section 4.1, all impacts of the Project would be less than significant or would be mitigated to a less-than-significant level. While the Project would not result in significant impacts on the environment, this section provides an analysis of a Reduced-Intensity Alternative along with the No-Project Alternative.

4.5.1 Reduced-Intensity Alternative

Description of the Alternative

The Reduced-Intensity Alternative would consist of a 45,000-square-foot entertainment center developed above the northern portion of the existing parking garage. The entertainment center building would incorporate additional entertainment and dining options such as a bowling alley, virtual reality

gaming suites, bar, and meeting room. The exterior of the entertainment center would be similar to the existing casino building. The top of the building would be approximately level with the top of the existing casino roof. No additional parking levels would be provided. All other aspects of the Reduced-Intensity Alternative would be similar to the Project described in Chapter 2, including construction of the recycled water tanks in the northern portion of the Rancheria.

Environmental Analysis

Aesthetics

The aesthetic impacts of the Reduced-Intensity Alternative would be reduced compared to the those of the Project. The entertainment center would have a smaller footprint and no additional parking levels would be added. This would reduce the amount of building visible from residential areas surrounding the Rancheria. **Mitigation Measure AES-1** (planting of screening trees) would be required under this alternative. With implementation of Mitigation Measure AES-1, impacts to scenic vistas would be less than significant.

Air Quality and Greenhouse Gas Emissions

The Reduced-Intensity Alternative would result in reduced air quality and GHG impacts as compared to the Project. This alternative would reduce vehicle trips by providing fewer entertainment options and capacity. Mobile sources associated with vehicle trips, which represent the largest source of criteria pollutant and GHG emissions, would likewise be reduced. Other air quality and GHG emissions would be similar but reduced under this alternative due to the smaller footprint and building space.

The three mitigation measures identified for the Project would be required for the Reduced-Intensity Alternative. These measures include: **Mitigation Measure AQ-1** (implementation of at least one of the mitigation measures identified in the El Dorado AQMD's *Guide to Air Quality Assessment*), **Mitigation Measure AQ-2** (design measures to ensure consistency with the AQAP), and **Mitigation Measure AQ-3** (implementation of SMAQMD's tier 1 operational GHG BMPs).

With the implementation of Mitigation Measure AQ-1, AQ-2, and AQ-3, the air quality and GHG emission impacts of the Reduced-Intensity Alternative impacts would be less than significant.

Biological Resources

The biological resource impacts of the Reduced-Intensity Alternative would be similar to those of the Project. All construction of the Reduced-Intensity Alternative would be limited to a previously disturbed area on the Rancheria and would not introduce significant additional disturbances to wildlife habitat. Implementation of the Reduced-Intensity Alternative would not directly impact any riparian habitat or other sensitive natural community, and the project site is too far away from the nearest riparian habitat or other sensitive natural community to result in any significant indirect adverse impacts. The Reduced-Intensity Alternative would be constructed in a manner that is generally consistent with El Dorado County's Grading Ordinance which prohibits degradation of water quality from construction sites. The Reduced-Intensity Alternative does not require the destruction of natural habitats that might interfere with the off-Reservation movement of fish or wildlife species. **Mitigation Measures BIO-1** (pre-construction surveys, etc.) would be required under this alternative. With the implementation of Mitigation Measure BIO-1, the off-Reservation biological resource impacts of the Reduced-Intensity Alternative impacts would be less than significant.

Geology and Soils

The geology and soil impacts of the Reduced-Intensity Alternative would be similar to those of the Project. Compliance with the CBC would ensure that the proposed structures would be constructed to withstand seismic ground shaking. The development would not result in slopes that would be prone to failure during a seismic event. Stormwater runoff from the Reduced-Intensity Alternative would be conveyed to an existing subsurface drainage system on the Rancheria. This system reduces storm flows to pre-development levels and would therefore not result in the scouring of drainages or erosion of topsoil downstream off the Rancheria. Potential off-Reservation seismic-related ground failure and soil erosion impacts would be less than significant.

Hazards and Hazardous Materials

The hazards and hazardous material impacts of the Reduced-Intensity Alternative would be similar to those of the Project. All potentially hazardous materials used during construction or operation would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable federal, state, and local standards and regulations. The proposed entertainment center would not introduce land uses that have the potential to cause wildfires and would not restrict access for emergency response. Construction of the Reduced-Intensity Alternative would comply with the CBC and the California Public Safety Code. Compliance with these codes includes safeguards from the hazards of fire, explosion or dangerous conditions, and provides safety and assistance to fire fighters and emergency responders. Potential off-Reservation hazards and hazardous material impacts would be less than significant.

Land Use

The Reduced-Intensity Alternative would result in similar land use impacts as compared to the Project. Construction of the Reduced-Intensity Alternative would be restricted to a previously developed portion of the Rancheria. No significant changes in existing land uses would occur. No off-Reservation infrastructure improvements would be required. The Reduced-Intensity Alternative does not fall within the boundaries of any adopted HCP or natural community conservation plan. Potential off-Reservation land use impacts would be less than significant.

Noise

The Reduced-Intensity Alternative would result in similar but reduced noise impacts as compared to the Project. Because this alternative would reduce vehicle trips by providing fewer entertainment options, there would be less traffic noise on the Rancheria. As a result, increases in noise levels at off-Reservation sensitive receptors would be slightly less than that generated by the Project. Construction noise would be similar to that generated by the Project but would be less extensive and of shorter duration.

Mitigation Measure NO-1 (construction noise BMPs) would be required under this alternative. With the implementation of Mitigation Measure NO-1, the off-Reservation noise impacts of the Reduced-Intensity Alternative impacts would be less than significant.

Public Services

The Reduced-Intensity Alternative would result in similar public services impacts as compared to the Project. Providing police, fire protection and emergency medical services to the Reduced-Intensity Alternative is not expected to result in the need to expand existing facilities or build new facilities off the

Rancheria. As with the Project, the Reduced-Intensity Alternative is not anticipated to induce population growth; thus, the Project is not anticipated to increase demands on off-Reservation schools, parks or other public facilities. Potential off-Reservation public services impacts would be less than significant.

Transportation and Traffic

The Reduced-Intensity Alternative would result in reduced transportation and traffic impacts as compared to the Project. This alternative would reduce vehicle trips by reducing entertainment options provided. As with the Project, the Highway 50 mainline and ramps at Red Hawk Parkway would operate at acceptable levels of service. The Reduced-Intensity Alternative would not disrupt pedestrian facilities, bicycle facilities, or public transit services. Potential off-Reservation transportation and traffic impacts would be less than significant.

Utilities and Service Systems

The Reduced-Intensity Alternative would result in similar utilities and service systems impacts as compared to the Project. The Reduced-Intensity Alternative would not require off-Reservation treatment of wastewater and is not expected to require new or expanded facilities to provide water. No off-Reservation stormwater drainage facilities would be developed. Potential off-Reservation utilities and service systems impacts would be less than significant.

Water Resources

The Reduced-Intensity Alternative would result in similar water resources impacts as compared to the Project. Wastewater generated by the entertainment center would be treated at the Tribe's wastewater treatment plant located on the Rancheria. The plant produces disinfected tertiary recycled water as defined by Title 22 California Code of Regulations. Recycled water would be used within the toilets of the existing casino, proposed entertainment center and for landscape irrigation. The remaining recycled water would be disposed on the Rancheria within the existing leachfields and sprayfields. Recycled water would not discharge to surface waters. Development of the entertainment center on the existing parking garage would not increase storm flows as the area of impervious surfaces would not increase. Stormwater runoff from the Reduced-Intensity Alternative would be conveyed to the existing subsurface drainage system below the surface parking lot north of the casino. Use of the subsurface drainage system would remove sediment and oil from stormwater and would ensure that the Reduced-Intensity Alternative would not violate water quality standards. The Reduced-Intensity Alternative would not alter the course of any drainage channels or streams. In addition, this alternative would be constructed in a manner that is generally consistent with El Dorado County's Grading Ordinance which prohibits degradation of water quality from construction sites. Potential off-Reservation water resources impacts would be less than significant.

4.5.2 No-Project Alternative

Description of the Alternative

Under the No-Project Alternative, no development considered under the Project or Reduced-Intensity Alternative would be developed. The existing casino would continue to operate but no expansion of the facilities would occur.

Environmental Analysis

Under the No-Project Alternative, the off-Reservation environmental impacts associated with construction and operation of additional facilities would be avoided. Off-Reservation environmental impacts associated with continued operation of the existing casino would continue. This alternative would reduce vehicle trips by eliminating entertainment center traffic. As a result, criteria pollutant and GHG emissions from vehicle trips would be reduced. Likewise, there would be less traffic noise generated on the Rancheria, and less traffic on the Highway 50 mainline and ramps at Red Hawk Parkway. Visual impacts associated with the expansion of buildings visible from residential areas around the Rancheria would be avoided. Due to the ongoing operation of the casino, the level of other environmental impacts would be similar in comparison to the Project.

4.5.3 Comparison of Alternatives

Table 4-4 provides a comparison of the level of impacts under the alternatives as compared to the Project. In many instances, the potential impacts would be similar, meaning that the overall outcome of implementing the Project compared to any one of the alternatives would generally result in a similar type and magnitude of effects on a specific resource.

Table 4-4
Impacts of Alternatives Compared to Project Impacts

Environmental Issue	Reduced-Intensity Alternative	No-Project Alternative
Aesthetics	Lesser	Lesser
Air Quality & GHG Emissions	Lesser	Lesser
Biological Resources	Similar	Similar
Geology and Soils	Similar	Similar
Hazards and Hazardous Materials	Similar	Similar
Land Use	Similar	Similar
Noise	Lesser	Lesser
Public Services	Similar	Similar
Transportation and Traffic	Lesser	Lesser
Utilities and Service Systems	Similar	Similar
Water Resources	Similar	Similar
<i>Lesser = Reduced impact as compared to the Project</i> <i>Similar = No substantial difference in impact as compared to the Project</i>		

As described in Section 4.1, there would be no significant and unavoidable impacts as a result of the Project, and each impact identified would be reduced to a less-than-significant level after mitigation.

For purposes of this TEIR, the environmentally superior alternative is the alternative that meets the Tribe's objectives and would cause the least impact to the natural and physical environment. For some types of environmental impacts, the No-Project Alternative would reduce environmental impact that may occur under the Project or Reduced-Intensity Alternative but would not achieve any of the project objectives listed in Section 2.2. The Reduced-Intensity Alternative would provide a smaller entertainment center and no additional parking. The Reduced-Intensity Alternative would result in reduced off-reservation impacts as compared to the Proposed Project but would not fully meet the Tribe's objectives to expand and diversify the economic base for the Tribe to support programs benefitting the health and welfare of Tribal members and the surrounding community.

The Project meets all project objectives listed in Section 2.2. In addition, all potential environmental impacts of the Project are reduced to less than significant levels after mitigation, and no significant and unavoidable impacts have been identified. Therefore, the Project is the environmentally superior alternative.

Chapter 5

AGENCY AND PUBLIC COMMENTS

5.1 SUMMARY OF NOTICE OF PREPARATION COMMENTS

The Tribe filed a Notice of Preparation (NOP) of the Draft TEIR on March 20, 2020 in accordance with Section 11.8.2 of the Compact, which is included as **Appendix A**. Comments were accepted for a 30-day period ending on April 20, 2020. Comments received during that time are included in **Appendix B**.

5.1.1 Comments Applicable to the Scope of Environmental Review

The following is a summary of comments related to the scope and content of the TEIR that were received, acknowledged, and considered in the scope and content of the TEIR:

Noise	A comment was received requesting what mitigations would there be for additional noise associated with performances at the proposed event center.
Light/Glare	A comment was received requesting what mitigations would there be for additional lights and glare associated with the proposed event center.
Fish and Wildlife	Comments regarding the assessment of biological resource impacts and mitigation in the vicinity of the Project.
Hazards	Comments regarding the assessment of hazards and hazardous materials impacts and mitigation.
Scope	Comments regarding the scope of environmental review under the Tribal-State Compact.

5.1.2 Comments Outside the Scope of Environmental Review

The following is a summary of comments that were received and acknowledged, but are considered outside of the scope and content of the TEIR:

- The requirements of CEQA, Assembly Bill 52, and Senate Bill 18 related to evaluation of cultural/historic resources. These State laws are not applicable to the Project.
- Security concerns regarding the potential for event center customers to trespass onto neighboring private property.
- Concern on the impacts of the Project on private real estate values of bordering property.

Chapter 6

LIST OF PREPARERS

6.1 Shingle Springs Band of Miwok Indians

Nicholas Bryson – Attorney General

Tyler Bila – Vice President of Facility & Security Operations, Red Hawk Casino

Darin Koupal – Environmental Manager

6.2 Consultants

6.2.1 Origin Environmental Planning

Josh Ferris – Principal Planner

6.2.2 Larry Wymer Traffic Engineering

Larry Wymer – Traffic Engineer

6.2.3 KD Anderson & Associates

Jonathan Flecker, P.E. – Civil/Traffic Engineer

6.2.4 Saxelby Acoustics

Luke Saxelby, INCE Bd. Cert. – Principal Consultant

6.2.5 Natural Investigations

G.O. Graening, PhD, MSE – Principal

Chapter 7

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Appendix A

Notice of Preparation

NOTICE OF PREPARATION
DRAFT TRIBAL ENVIRONMENTAL IMPACT REPORT

DATE: March 20, 2020

TO: State Clearinghouse, County of El Dorado, Interested Parties

COMMENT PERIOD: March 20, 2020 to April 20, 2020

The Shingle Springs Band of Miwok Indians (Tribe) will be the lead agency for the preparation of a Tribal Environmental Impact Report (TEIR) to assess the potential off-Reservation impacts of the Tribe's proposed Event Center Project (Project). The proposed Event Center will be located at the existing Red Hawk Casino on the Tribe's Reservation in El Dorado County, California. The TEIR will be developed in accordance with the requirements of the Tribal-State Compact (Compact) between the Tribe and the State of California.

The purpose of this notice is to describe the Project and request comments on off-Reservation environmental issues and reasonable mitigation measures for the Tribe to consider in preparation of the TEIR. Written comments must be postmarked or received by email no later than April 20, 2020.

Please send your written responses to:

Shingle Springs Band of Miwok Indians
Attn: NOP Comments
P.O. Box 1340
Shingle Springs, CA 95682
EventCenterNOP@ssband.org

A description of the Project, setting and potential off-Reservation environmental impacts is provided below.

BACKGROUND

The Tribe is currently planning expansion of its Red Hawk Casino, which opened in 2008. The expansion will include the construction of a hotel and an event center. Hotel development was identified, evaluated, and approved in connection with the Final Environmental Assessment and Findings of No Significant Impact previously prepared by the National Indian Gaming Commission and Bureau of Indian Affairs in compliance with the National Environmental Policy Act. Therefore, consistent with the Compact and the Memorandum of Understanding and Intergovernmental Agreement Between the County of El Dorado and the Tribe, the hotel component has already been subjected to environmental review and will not be addressed as part of the Project evaluated in the TEIR. All applicable mitigation measures identified in the Final Environmental Assessment and Findings of No Significant Impact will be implemented during construction and operation of the proposed hotel.

The Tribe's development of the event center and associated facilities described below was not addressed in the Final Environmental Assessment and Findings of No Significant Impact and will be the subject of the TEIR.

PROJECT DESCRIPTION

The Project consists of the development of an 1,827-seat event center adjoining the existing Red Hawk Casino located on the Shingle Springs Rancheria in El Dorado County, which serves as the Tribe's Reservation (**Figures 1 and 2**). The event center would extend from the north side of the existing casino building. The event center would provide a venue for conventions, performances and special events. A 24-lane bowling alley would be provided on a lower level. Other uses would include meeting rooms, kitchen, additional buffet seating, additional back of house space, and a loading dock. The existing eight-level parking garage would be expanded with an additional two levels.

POTENTIAL OFF-RESERVATION ENVIRONMENTAL IMPACTS

The Compact includes an Off-Reservation Environmental Impact Analysis Checklist that provides a list of environmental issues to be evaluated within the TEIR. Based on an initial review of these environmental issues, the expected scope of the TEIR is outlined below.

Aesthetics – The TEIR will address potential impacts to off-Reservation scenic vistas and potential impacts associated with new sources of light or glare.

Agriculture and Forest Resources – Project construction would be limited to the Reservation and is not expected to result in the conversion of farmland or forests off the Reservation.

Air Quality – The TEIR will evaluate short-term air quality impacts from construction, and long-term air quality impacts from operations, including increased vehicular traffic associated with the Project.

Biological Resources – The TEIR will address the potential for off-Reservation impacts on species, habitats, and plants, including water quality impacts and impacts to wildlife from site lighting.

Cultural Resources – Project ground disturbance would be limited to the Reservation and thus no impacts to off-Reservation cultural or paleontological resources would occur.

Geology and Soils – The TEIR will discuss the potential for off-Reservation impacts related to seismic events and soil erosion.

Greenhouse Gas Emissions – The TEIR will address generation of greenhouse gas emissions directly and indirectly.

Hazards and Hazardous Materials – The TEIR will discuss the potential for impacts from the use and handling of hazardous materials and off-Reservation hazards.

Water Resources – The TEIR will evaluate the potential for the Project to impact off-Reservation water quality, groundwater supplies and stormwater drainage.

Land Use – The TEIR will include an analysis of the Project's potential to conflict with off-Reservation land use plans and policies.

Mineral Resources – Project construction would be limited to the Reservation and is not expected to result in the loss of off-Reservation mineral resources.

Noise – The TEIR will evaluate noise associated with construction and operation of the Project, including any increased traffic noise.

Population and Housing – The Project is not anticipated to induce substantial off-Reservation population growth. The Project would not displace existing housing.

Public Services – The TEIR will discuss potential impacts to public service providers, including law enforcement, fire protection, and solid waste services. The Project is not anticipated to create additional demands on schools or parks.

Recreation – The Project is not anticipated to increase the use of existing off-Reservation recreational facilities such that substantial physical deterioration would occur.

Transportation and Traffic – The TEIR will evaluate the Project's impact on off-Reservation roadways and potential conflicts with applicable congestion management programs and emergency access.

Utilities and Service Systems – The TEIR will address the potential for the Project to impact off-Reservation stormwater facilities and water and sewer utility systems.

Cumulative Effects – The TEIR will evaluate any individually limited, but cumulatively considerable off-Reservation impacts.



Shingle Springs Band of Miwok Indians

Figure 1
Regional Location



Shingle Springs Band of Miwok Indians

Figure 2
Project Site with Existing and Proposed Facilities

Appendix B

Scoping Comment Letters



NATIVE AMERICAN HERITAGE COMMISSION

March 23, 2020

Nicholas Bryson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95662

Re: 2020030870, Event Center Project, El Dorado County

Dear Mr. Bryson:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines § 15064.5 (b))). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1))). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

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Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Kelfer
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COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

COMMISSIONER
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Pomo

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Chumash

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AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
 - a. A brief description of the project.
 - b. The lead agency contact information.
 - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
 - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
 - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
 - a. Alternatives to the project.
 - b. Recommended mitigation measures.
 - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
 - a. Type of environmental review necessary.
 - b. Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.
 - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
 - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
 - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- a. Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.
 - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i. Protecting the cultural character and integrity of the resource.
 - ii. Protecting the traditional use of the resource.
 - iii. Protecting the confidentiality of the resource.
- c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
- e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
- f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991)..

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
- b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
- c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
 - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
 - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

- a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
- b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, § 15064.5(f) (CEQA Guidelines § 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code § 7050.5, Public Resources Code § 5097.98, and Cal. Code Regs., tit. 14, § 15064.5, subdivisions (d) and (e) (CEQA Guidelines § 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Staff Services Analyst

cc: State Clearinghouse

Nicholas Bryson

From: Chris Blunt <cjblunt49@gmail.com>
Sent: Friday, April 17, 2020 3:52 PM
To: Event Center NOP
Subject: Comments on the TEIR

My name is Christopher Blunt and I live at 2871 Shingle Springs Drive with my wife, daughter and husband, and their four children.

I am writing this letter in response to your request for comments related to the Shingle Springs Band of Miwok Indians (Tribe) and your Environmental Impact Report dated March 20, 2020. Our property is on the North side of Home Court and borders the Reservation on both the North and East side. I am concerned and curious about noise and security associated with the new Event Center Project.

Your letter and maps show the site for the new Event Center will border our property on the East side and will provide a venue for conventions, performances and special events. What mitigations are there in the Project for reducing additional noise, lights and/or glare associated with performances and special events at the Event Center? Are there procedures in the Project for additional security if Event Center customers trespass onto our property?

I am also concerned that your Planed Event Center could reduce the value of our property due to the possible stigma associated with additional noise, security and other annoyances associated with the Project.

I would appreciate any correspondence from the Tribe associated with my concerns related to your Project.

Christopher Blunt

Nicholas Bryson

From: Cashdollar, Shaundra@Wildlife <Shaundra.Cashdollar@wildlife.ca.gov>
Sent: Friday, April 17, 2020 8:57 AM
To: Event Center NOP
Cc: Voegeli, Nathan@Wildlife; Barker, Kelley@Wildlife; Quillman, Gabriele@Wildlife;
'state.clearinghouse@opr.ca.gov'
Subject: EVENT CENTER - NOTICE OF PREPARATION OF A TRIBAL ENVIRONMENTAL IMPACT
REPORT – SCH# 2020030870
Attachments: NOP_El_Dorado_County_Miwok_Event_Center_v2.docx.pdf

Mr. Bryson,
Please let me know that you have received this email and are able to open the attachment.
Sincerely,

Shaundra Cashdollar
Department of Fish and Wildlife



Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



April 17, 2020

Nicholas Bryson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Subject: EVENT CENTER - NOTICE OF PREPARATION OF A TRIBAL
ENVIRONMENTAL IMPACT REPORT – SCH# 2020030870

Dear Mr. Bryson:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Preparation (NOP) of a Tribal Environmental Impact Report (TEIR) from the Shingle Springs Band of Miwok Indians (Tribe) for the Event Center Project (Project) on the Shingle Springs Rancheria in El Dorado County pursuant to the Tribal-State Compact between the State of California and the Tribe. Thank you for the opportunity to provide comments and recommendations regarding those Project activities that may result in potentially significant off-Reservation impacts to California fish, wildlife, plants and their habitats. In addition to these comments, and in recognition of the inherent Tribal sovereignty of the Shingle Springs Rancheria, CDFW would welcome direct government-to-government consultation with the Tribe at its request for the Project or any of the issues raised in this letter. CDFW is interested in working collaboratively to resolve any concerns regarding this Project.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code §§711.7, subd. (a) & 1802; Pub. Resources Code §21070; CEQA Guidelines §15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code §1802). As a Trustee Agency, CDFW provides biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

PROJECT DESCRIPTION SUMMARY

The Project consists of the development of an 1,827-seat event center adjoining the existing Red Hawk Casino located on the Shingle Springs Rancheria, which serves as the Tribe's Reservation. The Project is located in El Dorado County at Latitude 38° 41' 46, Longitude -120° 54' 33".

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COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations presented below to assist the Tribe in identifying and/or mitigating the Project's significant or potentially significant off-Reservation impacts on fish and wildlife resources. CDFW recognizes that the TEIR is being developed pursuant to the Tribal-State Compact and any references in this letter to the California Fish and Game Code are provided for context only.

ENVIRONMENTAL SETTING

Knowledge of the regional setting of a project is critical to the assessment of off-Reservation environmental impacts, particularly environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the potentially significant off-Reservation impacts of the Project, CDFW recommends that the TEIR include a complete assessment of the flora and fauna in the vicinity of the Project, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats. CDFW suggests that the TEIR specifically include:

1. An assessment of the various habitat types located within the Project's vicinity, particularly those with the potential to be impacted by the Project's off-Reservation effects, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009). Habitat mapping at the alliance level will help establish baseline vegetation conditions.
2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW's California Natural Diversity Database (CNDDDB) in Sacramento may be consulted at <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data> and may be contacted at (916) 322-2493 or bdb@wildlife.ca.gov to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed Project.

Please note that CDFW's CNDDDB is not exhaustive in terms of the data it houses, nor is it an absence database. Records in the CNDDDB exist only where species have been detected and reported. This means there is a bias in the database towards locations that have had more development pressures, and thus more survey work. A lack of records in a certain area does not mean that no special-status species exist in that area, just that no observations have been submitted to the CNDDDB in that area. CDFW recommends using the CNDDDB QuickView tool to generate a list of special-status species in the nine United States Geologic Survey (USGS) 7.5-minute quadrangles surrounding the Project as a starting point in determining what species may be present in the area (see Data Use Guidelines at <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>).

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3. A complete inventory of rare, threatened, endangered, and other sensitive species with the potential to occur within the Project's vicinity. The inventory should address seasonal variations in use of the Project area vicinity and should not be limited to resident species. CDFW recommends that the TEIR include the results of focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable. Please note that negative survey results do not guarantee that the species in question will not be impacted by future project activities, as species that are absent from a site at one time may move into the area in the future. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of unusual environmental conditions such as drought.
4. A thorough floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see <https://www.wildlife.ca.gov/Conservation/Plants>).
5. Any other information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region.

IMPACT ANALYSIS

The TEIR should provide a thorough discussion of the Project's potential direct, indirect, and cumulative off-Reservation impacts on biological resources. To ensure that the Project's off-Reservation impacts to biological resources are fully analyzed, CDFW recommends that the following information be included in the TEIR:

1. A discussion of the Project's potential to cause direct take or injury of special-status species via off-Reservation impacts. "Take" is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill".
2. A discussion of the Project's potential direct impacts to off-Reservation habitats, particularly sensitive habitats such as wetlands, streams, riparian areas, and habitats used by special-status species.
3. A discussion of the Project's potential indirect off-Reservation impacts, including, but not limited to impacts from lighting, noise, human activity, wildlife-human interactions, potential introduction or spread of exotic and/or invasive species, potential impacts on wildlife movement, and impacts on drainage. The latter subject should address Project-related changes in off-Reservation drainage patterns and water quality, including volume, velocity, and frequency of existing and post-Project surface flows; the potential for polluted runoff to enter streams and water bodies;

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and the potential to cause soil erosion and/or sedimentation in streams and water bodies.

4. A cumulative effects analysis that includes all potential direct and indirect Project related off-Reservation impacts to special-status species and their habitats; riparian areas, wetlands, and other sensitive habitats; wildlife corridors or wildlife movement areas; open space; and adjacent natural habitats in the cumulative effects analysis.

MITIGATION

The TEIR should include appropriate and adequate avoidance, minimization, and/or mitigation measures for all direct, indirect, and cumulative impacts that are expected to occur as a result of the construction and long-term operation and maintenance of the Project. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Several fully protected species (Fish & G. Code §3511) have the potential to occur within the vicinity of the Project, including, but not limited to: golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), and ringtail (*Bassariscus astutus*). Project activities described in the TEIR should be designed to completely avoid any fully protected species that have the potential to be impacted by the Project's off-Reservation effects. CDFW also recommends that the TEIR fully analyze potential off-Reservation adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the Tribe include in the analysis a discussion of how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species.
2. *Mitigation for Habitat Impacts*: If the Project will result in unavoidable significant off-Reservation impacts to sensitive habitats, CDFW recommends consideration of habitat restoration and/or enhancement on-site or near the impacted areas as mitigation. If on-site restoration and/or enhancement is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be considered.

CDFW recommends the TEIR include measures to perpetually protect the targeted habitat values within habitat mitigation areas from direct and indirect adverse off-Reservation impacts in order to meet mitigation objectives to offset Project impacts. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc. If habitat preservation is proposed, CDFW recommends that a conservation easement or transfer in fee title to a conservation entity be used.

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3. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the restoration sites; (d) a planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought. CDFW recommends that planted trees and shrubs be closely monitored for a period of at least five years, including at least two years without supplemental irrigation.

CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. On-site seed collection should be initiated as soon as possible in order to accumulate sufficient propagule material for subsequent use in future years. On-site vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various project components as appropriate.

Restoration objectives should include protecting off-Reservation special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

4. *Nesting and Migratory Birds*: The federal Migratory Bird Treaty Act and provisions in the Fish and Game Code provide protections for migratory birds. If Project activities have the potential to impact nesting and/or migratory birds off-Reservation, CDFW recommends that the TEIR include measures to avoid or minimize impacts. Avoidance and minimization measures may include the use of pre-construction nest surveys, Project phasing and timing, monitoring of Project-related noise, the use of sound walls, and/or buffers around nests. CDFW recommends that pre-construction nesting surveys be conducted no more than three days prior to construction, as instances of nesting may be missed if surveys are conducted sooner.

ENVIRONMENTAL DATA

CDFW requests that the Tribe report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The completed form can be

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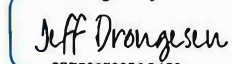
submitted online or mailed electronically to CNDDDB at the following email address:
BDB@wildlife.ca.gov.

FURTHER COORDINATION

CDFW appreciates the opportunity to comment on the NOP to assist in identifying and mitigating potential off-Reservation Project impacts on biological resources and would welcome further notifications of proposed actions and pending decisions regarding the Project. CDFW personnel are available to discuss biological resources and strategies to minimize impacts to off-Reservation biological resources. Questions regarding this letter should be directed to Gabriele Quillman, Environmental Scientist at (916) 358-2955 or gabriele.quillman@wildlife.ca.gov.

If the Tribe would like to request a government-to-government consultation with CDFW on this Project, please contact CDFW's Tribal Liaison Nathan Voegeli at (916) 651-7653 or tribal.liason@wildlife.ca.gov.

Sincerely,

DocuSigned by:

37E732799B3C452...

Jeff Drongesen
Environmental Program Manager

cc: Kelley Barker, Senior Environmental Scientist Supervisor
Gabriele Quillman, Environmental Scientist
Nathan Voegeli, Attorney and Tribal Liaison
Department of Fish and Wildlife

Office of Planning and Research, State Clearinghouse, Sacramento

LITERATURE CITED

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California.
<http://vegetation.cnps.org/>

Nicholas Bryson

From: Weckesser, Stacy@DTSC <Stacy.Weckesser@dtsc.ca.gov>
Sent: Wednesday, April 15, 2020 2:09 PM
To: Event Center NOP
Cc: State.Clearinghouse@opr.ca.gov; Jameson, Lora@DTSC; Kereazis, Dave@DTSC; McCreary, Gavin@DTSC
Subject: TEIR letter for the Event Center Project
Attachments: Event Center Project.pdf

Good Afternoon,

Please see the attached PDF copy of the TEIR letter for the Event Center Project. Hard copies can be made available upon request.

If you have any questions please contact Project Manager Gavin McCreary via email at Gavin.McCreary@dtsc.ca.gov or via telephone at (916) 255-3710.

Warm Regards,

*Stacy Weckesser
Office Assistant
Department of Toxic Substances Control
(916) 255-3698*



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D.
Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Gavin Newsom
Governor

April 15, 2020

Mr. Nicholas Bryson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, California 95682
EventCenterNOP@ssband.org

NOTICE OF PREPARATION OF A TRIBAL ENVIRONMENTAL IMPACT REPORT
FOR EVENT CENTER PROJECT – DATED MARCH 20, 2020
(STATE CLEARINGHOUSE NUMBER: UNKNOWN)

Dear Mr. Bryson:

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation for a Tribal Environmental Impact Report (TEIR) for the Event Center Project. The proposed project consists of the development of a 1,827-seat event center adjoining the existing Red Hawk Casino located on the Shingle Springs Rancheria in El Dorado County. The event center would extend from the north side of the existing casino building.

DTSC recommends that the following issues be evaluated in the TEIR Hazards and Hazardous Materials section:

1. The TEIR should acknowledge historic or future activities on or near the project site that may have the potential to result in the release of hazardous wastes/substances on the project site. In instances in which releases have occurred or may occur, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. The TEIR should also identify the mechanism(s) to initiate any required investigation and/or remediation and the government agency who will be responsible for providing appropriate regulatory oversight.
2. Refiners in the United States started adding lead compounds to gasoline in the 1920s in order to boost octane levels and improve engine performance. This practice did not officially end until 1992 when lead was banned as a fuel additive in California. Tailpipe emissions from automobiles using leaded gasoline contained lead and resulted in aerially deposited lead (ADL) being deposited in

and along roadways throughout the state. ADL-contaminated soils still exist along roadsides and medians and can also be found underneath some existing road surfaces due to past construction activities. Due to the potential for ADL-contaminated soil DTSC, recommends collecting soil samples for lead analysis prior to performing any intrusive activities for the project described in the TEIR.

3. If any sites within the project area or sites located within the vicinity of the project have been used or are suspected of having been used for mining activities, proper investigation for mine waste should be discussed in the TEIR. DTSC recommends that any project sites with current and/or former mining operations onsite or in the project site area should be evaluated for mine waste according to DTSC's 1998 Abandoned Mine Land Mines Preliminary Assessment Handbook (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/11/aml_handbook.pdf).
4. If buildings or other structures are to be demolished on any project sites included in the proposed project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's 2006 *Interim Guidance Evaluation of School Sites with Potential Contamination from Lead Based Paint, Termiticides, and Electrical Transformers* (https://dtsc.ca.gov/wpcontent/uploads/sites/31/2018/09/Guidance_Lead_Contamination_050118.pdf).
5. If any projects initiated as part of the proposed project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to DTSC's 2001 *Information Advisory Clean Imported Fill Material* (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/SMP_FS_Cleanfill-Schools.pdf).
6. If any sites included as part of the proposed project have been used for agricultural, weed abatement or related activities, proper investigation for organochlorinated pesticides should be discussed in the TEIR. DTSC recommends the current and former agricultural lands be evaluated in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)* (<https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/Ag-Guidance-Rev-3-August-7-2008-2.pdf>).

Mr. Nicholas Bryson
April 15, 2020
Page 3

DTSC appreciates the opportunity to comment on the forthcoming TEIR. Should you need any assistance with an environmental investigation, please submit a request for Lead Agency Oversight Application, which can be found at: https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/VCP_App-1460.doc. Additional information regarding voluntary agreements with DTSC can be found at: <https://dtsc.ca.gov/brownfields/>.

If you have any questions, please contact me at (916) 255-3710 or via email at Gavin.McCreary@dtsc.ca.gov.

Sincerely,



Gavin McCreary
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Ms. Lora Jameson, Chief
Site Evaluation and Remediation Unit
Department of Toxic Substances Control
Lora.Jameson@dtsc.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov



County of El Dorado

Chief Administrative Office

330 Fair Lane
Placerville, CA 95667-4197

Don Ashton, MPA
Chief Administrative Officer

Phone (530) 621-5530
Fax (530) 626-5730

April 17, 2020

Ms. Regina Cuellar, Chairwoman
Shingle Springs Band of Miwok Indians
PO Box 1340
Shingle Springs, CA 95682

Dear Chairwoman Cuellar,

El Dorado County ("County") is in receipt of the Tribe's Notice of Preparation of a Draft Tribal Environmental Impact Report ("NOP") for the Tribe's proposed event center project at the Red Hawk Casino.

With respect to the event center and parking structure, which were not evaluated in the December 2001 Final Environmental Assessment for the Shingle Springs Rancheria Hotel and Casino Project, the County concurs that they are subject to the environmental review under section 11.8 of the Tribe's 2008 Amended Compact with the State. At this time, the County is not aware of a discretionary approval requiring the County to perform environmental review under the California Environmental Quality Act for this project, but the County will continue to evaluate this issue as the details of the event center project are more fully developed and disclosed.

Absent the need for a discretionary approval from the County, the 2008 Amended Compact recognizes that the Tribe's development activities have direct environmental and fiscal impacts on the County and its residents. Section 11.8.7 of the 2008 Amended Compact requires the Tribe to commence negotiations with the County before issuance of the Final Tribal Environmental Impact Report and execute a written intergovernmental agreement with the County before commencing the project. In addition, various impacts must be addressed and mitigated in the intergovernmental agreement, which include but are not limited to water resources, land use, traffic, noise, cumulative effects, "compensation for law enforcement, fire protection, emergency medical services and any other public services to be provided by the County and its special district to the Tribe . . . as a consequence of the Project," as well as "mitigation of any effect on public safety attributed to the Project, including any compensation to the County as a consequence thereof."

The County considers the intergovernmental agreement under section 11.8.7 as a critical component to ensuring that the Tribe's development does not negatively impact the surrounding community and County and looks forward to meaningful government-to-government discussions with the Tribe to ensure appropriate mitigation that addresses the environmental and fiscal impacts to essential County services and the surrounding community.

It is also our understanding that the Tribe's anticipated construction of the hotel has been delayed and the current projection is for construction to commence in late Spring or early Summer 2021. We would appreciate the Tribe keeping the County informed of any changes to the anticipated construction date.

Lastly, the County and Tribe committed to meeting at least annually in an effort to foster our government-to-government relationship. While the Tribe understandably had to cancel the last scheduled meeting, the County requests that a new meeting date be set in the near future.

Sincerely,



Don Ashton
Chief Administrative Officer

- c. Members, Board of Supervisors
Tiffany Schmid, Director of Planning & Building
Breann Moebius, Deputy County Counsel

Appendix C
Air Quality Files

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

Red Hawk Entertainment Center
El Dorado-Mountain County County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	75.00	1000sqft	0.00	75,000.00	0
Unenclosed Parking Structure	174.00	1000sqft	0.00	174,000.00	0
	0.00		0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	70
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

Project Characteristics -

Land Use - 75,000 square foot entertainment center and 3-level parking garage developed on existing parking garage. No grading or site prep required.

Construction Phase - No demolition, site preparation, grading or paving required.

Grading - No grading required.

Architectural Coating - Architectural Coating per EDCAQMD Rule 215

Area Coating - Architectural Coating per EDCAQMD Rule 215

Water And Wastewater - No additional outdoor water use. Indoor water use based on engineer's estimate.

Area Mitigation - Architectural Coating per EDCAQMD Rule 215

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	250	50
tblConstructionPhase	NumDays	0.00	230.00
tblConstructionPhase	NumDays	0.00	18.00
tblConstructionPhase	PhaseEndDate	9/30/2021	8/18/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/13/2022
tblConstructionPhase	PhaseStartDate	10/1/2021	8/19/2022
tblLandUse	LotAcreage	24.11	0.00
tblLandUse	LotAcreage	3.99	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

2.0 Emissions Summary**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0530	0.4261	0.4386	1.1100e-003	0.0504	0.0155	0.0659	0.0136	0.0143	0.0279	0.0000	100.7412	100.7412	0.0123	0.0000	101.0488
2022	0.3096	0.9713	1.0659	2.7600e-003	0.1275	0.0329	0.1604	0.0344	0.0304	0.0648	0.0000	250.8184	250.8184	0.0304	0.0000	251.5787
Maximum	0.3096	0.9713	1.0659	2.7600e-003	0.1275	0.0329	0.1604	0.0344	0.0304	0.0648	0.0000	250.8184	250.8184	0.0304	0.0000	251.5787

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0530	0.4261	0.4386	1.1100e-003	0.0504	0.0155	0.0659	0.0136	0.0143	0.0279	0.0000	100.7411	100.7411	0.0123	0.0000	101.0488
2022	0.3096	0.9713	1.0659	2.7600e-003	0.1275	0.0329	0.1604	0.0344	0.0304	0.0648	0.0000	250.8183	250.8183	0.0304	0.0000	251.5786
Maximum	0.3096	0.9713	1.0659	2.7600e-003	0.1275	0.0329	0.1604	0.0344	0.0304	0.0648	0.0000	250.8183	250.8183	0.0304	0.0000	251.5786

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-1-2021	12-31-2021	0.4811	0.4811
2	1-1-2022	3-31-2022	0.4265	0.4265
3	4-1-2022	6-30-2022	0.4244	0.4244
4	7-1-2022	9-30-2022	0.4372	0.4372
		Highest	0.4811	0.4811

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3973	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003
Energy	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	196.0131	196.0131	8.5000e-003	1.9600e-003	196.8096
Mobile	0.2275	0.6946	2.2810	5.9300e-003	0.5212	6.2000e-003	0.5274	0.1398	5.8000e-003	0.1456	0.0000	539.2624	539.2624	0.0189	0.0000	539.7343
Waste						0.0000	0.0000		0.0000	0.0000	0.4182	0.0000	0.4182	0.0247	0.0000	1.0360
Water						0.0000	0.0000		0.0000	0.0000	10.2498	52.9561	63.2058	1.0551	0.0254	97.1396
Total	0.6262	0.7076	2.2942	6.0100e-003	0.5212	7.1900e-003	0.5284	0.1398	6.7900e-003	0.1465	10.6679	788.2360	798.9040	1.1072	0.0273	834.7243

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3230	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003
Energy	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	196.0131	196.0131	8.5000e-003	1.9600e-003	196.8096
Mobile	0.2275	0.6946	2.2810	5.9300e-003	0.5212	6.2000e-003	0.5274	0.1398	5.8000e-003	0.1456	0.0000	539.2624	539.2624	0.0189	0.0000	539.7343
Waste						0.0000	0.0000		0.0000	0.0000	0.4182	0.0000	0.4182	0.0247	0.0000	1.0360
Water						0.0000	0.0000		0.0000	0.0000	9.2248	47.8704	57.0952	0.9496	0.0228	87.6365
Total	0.5518	0.7076	2.2942	6.0100e-003	0.5212	7.1900e-003	0.5284	0.1398	6.7900e-003	0.1465	9.6430	783.1504	792.7934	1.0017	0.0248	825.2211

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	11.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.61	0.65	0.76	9.53	9.26	1.14

3.0 Construction Detail**Construction Phase**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	9/30/2021	5	0	
2	Site Preparation	Site Preparation	10/1/2021	9/30/2021	5	0	
3	Grading	Grading	10/1/2021	9/30/2021	5	0	
4	Building Construction	Building Construction	10/1/2021	8/18/2022	5	230	
5	Paving	Paving	10/1/2021	9/30/2021	5	0	
6	Architectural Coating	Architectural Coating	8/19/2022	9/13/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,500; Non-Residential Outdoor: 37,500; Striped Parking Area: 10,440 (Architectural Coating – sqft)

OffRoad Equipment

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	105.00	41.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.2 Demolition - 2021

Mitigated Construction Off-Site

[illegible]

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

[illegible]

3.4 Grading - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.4 Grading - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2635	0.2397	3.8000e-004		0.0148	0.0148		0.0136	0.0136	0.0000	33.0271	33.0271	0.0107	0.0000	33.2941
Total	0.0256	0.2635	0.2397	3.8000e-004		0.0148	0.0148		0.0136	0.0136	0.0000	33.0271	33.0271	0.0107	0.0000	33.2941

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4600e-003	0.1485	0.0494	3.3000e-004	7.9500e-003	4.3000e-004	8.3800e-003	2.3000e-003	4.1000e-004	2.7100e-003	0.0000	31.3944	31.3944	6.0000e-004	0.0000	31.4094
Worker	0.0230	0.0142	0.1496	4.0000e-004	0.0424	3.1000e-004	0.0427	0.0113	2.9000e-004	0.0116	0.0000	36.3197	36.3197	1.0300e-003	0.0000	36.3453
Total	0.0274	0.1626	0.1989	7.3000e-004	0.0504	7.4000e-004	0.0511	0.0136	7.0000e-004	0.0143	0.0000	67.7141	67.7141	1.6300e-003	0.0000	67.7547

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2635	0.2397	3.8000e-004		0.0148	0.0148		0.0136	0.0136	0.0000	33.0270	33.0270	0.0107	0.0000	33.2941
Total	0.0256	0.2635	0.2397	3.8000e-004		0.0148	0.0148		0.0136	0.0136	0.0000	33.0270	33.0270	0.0107	0.0000	33.2941

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3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4600e-003	0.1485	0.0494	3.3000e-004	7.9500e-003	4.3000e-004	8.3800e-003	2.3000e-003	4.1000e-004	2.7100e-003	0.0000	31.3944	31.3944	6.0000e-004	0.0000	31.4094
Worker	0.0230	0.0142	0.1496	4.0000e-004	0.0424	3.1000e-004	0.0427	0.0113	2.9000e-004	0.0116	0.0000	36.3197	36.3197	1.0300e-003	0.0000	36.3453
Total	0.0274	0.1626	0.1989	7.3000e-004	0.0504	7.4000e-004	0.0511	0.0136	7.0000e-004	0.0143	0.0000	67.7141	67.7141	1.6300e-003	0.0000	67.7547

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0563	0.5761	0.5865	9.3000e-004		0.0305	0.0305		0.0281	0.0281	0.0000	82.1211	82.1211	0.0266	0.0000	82.7851
Total	0.0563	0.5761	0.5865	9.3000e-004		0.0305	0.0305		0.0281	0.0281	0.0000	82.1211	82.1211	0.0266	0.0000	82.7851

Red Hawk Entertainment Center - El Dorado-Mountain County County, Annual

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3501	0.1152	8.2000e-004	0.0198	9.5000e-004	0.0207	5.7100e-003	9.1000e-004	6.6200e-003	0.0000	77.4466	77.4466	1.3700e-003	0.0000	77.4808
Worker	0.0540	0.0318	0.3403	9.6000e-004	0.1054	7.4000e-004	0.1061	0.0280	6.9000e-004	0.0287	0.0000	87.0421	87.0421	2.2800e-003	0.0000	87.0992
Total	0.0644	0.3818	0.4555	1.7800e-003	0.1252	1.6900e-003	0.1269	0.0338	1.6000e-003	0.0353	0.0000	164.4887	164.4887	3.6500e-003	0.0000	164.5800

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0563	0.5761	0.5865	9.3000e-004		0.0305	0.0305		0.0281	0.0281	0.0000	82.1210	82.1210	0.0266	0.0000	82.7850
Total	0.0563	0.5761	0.5865	9.3000e-004		0.0305	0.0305		0.0281	0.0281	0.0000	82.1210	82.1210	0.0266	0.0000	82.7850

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3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.3501	0.1152	8.2000e-004	0.0198	9.5000e-004	0.0207	5.7100e-003	9.1000e-004	6.6200e-003	0.0000	77.4466	77.4466	1.3700e-003	0.0000	77.4808
Worker	0.0540	0.0318	0.3403	9.6000e-004	0.1054	7.4000e-004	0.1061	0.0280	6.9000e-004	0.0287	0.0000	87.0421	87.0421	2.2800e-003	0.0000	87.0992
Total	0.0644	0.3818	0.4555	1.7800e-003	0.1252	1.6900e-003	0.1269	0.0338	1.6000e-003	0.0353	0.0000	164.4887	164.4887	3.6500e-003	0.0000	164.5800

3.6 Paving - 2021

Unmitigated Construction On-Site

[illegible]

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3.6 Paving - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

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3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	0.1878	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017

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3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	7.4700e-003	2.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9107	1.9107	5.0000e-005	0.0000	1.9119
Total	1.1800e-003	7.0000e-004	7.4700e-003	2.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9107	1.9107	5.0000e-005	0.0000	1.9119

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1859					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	0.1878	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017

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3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.0000e-004	7.4700e-003	2.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9107	1.9107	5.0000e-005	0.0000	1.9119
Total	1.1800e-003	7.0000e-004	7.4700e-003	2.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.9107	1.9107	5.0000e-005	0.0000	1.9119

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2275	0.6946	2.2810	5.9300e-003	0.5212	6.2000e-003	0.5274	0.1398	5.8000e-003	0.1456	0.0000	539.2624	539.2624	0.0189	0.0000	539.7343
Unmitigated	0.2275	0.6946	2.2810	5.9300e-003	0.5212	6.2000e-003	0.5274	0.1398	5.8000e-003	0.1456	0.0000	539.2624	539.2624	0.0189	0.0000	539.7343

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	803.25	803.25	803.25	1,410,456	1,410,456
Unenclosed Parking Structure	0.00	0.00	0.00		
Total	803.25	803.25	803.25	1,410,456	1,410,456

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	14.70	6.60	6.60	0.00	81.00	19.00	66	28	6
Unenclosed Parking Structure	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Arena	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Unenclosed Parking Structure	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	181.9651	181.9651	8.2300e-003	1.7000e-003	182.6781
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	181.9651	181.9651	8.2300e-003	1.7000e-003	182.6781
NaturalGas Mitigated	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315
NaturalGas Unmitigated	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315

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5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	263250	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	263250	1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.4200e-003	0.0129	0.0108	8.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	14.0480	14.0480	2.7000e-004	2.6000e-004	14.1315

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	321000	93.3826	4.2200e-003	8.7000e-004	93.7485
Unenclosed Parking Structure	304500	88.5825	4.0100e-003	8.3000e-004	88.9296
Total		181.9651	8.2300e-003	1.7000e-003	182.6781

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	321000	93.3826	4.2200e-003	8.7000e-004	93.7485
Unenclosed Parking Structure	304500	88.5825	4.0100e-003	8.3000e-004	88.9296
Total		181.9651	8.2300e-003	1.7000e-003	182.6781

6.0 Area Detail**6.1 Mitigation Measures Area**

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Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3230	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003
Unmitigated	0.3973	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003

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6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0930					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3042					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003
Total	0.3973	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0186					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3042					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003
Total	0.3230	2.0000e-005	2.2900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7400e-003

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7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	57.0952	0.9496	0.0228	87.6365
Unmitigated	63.2058	1.0551	0.0254	97.1396

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	32.3078 / 2.0622	63.2058	1.0551	0.0254	97.1396
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		63.2058	1.0551	0.0254	97.1396

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	29.077 / 2.0622	57.0952	0.9496	0.0228	87.6365
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		57.0952	0.9496	0.0228	87.6365

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.4182	0.0247	0.0000	1.0360
Unmitigated	0.4182	0.0247	0.0000	1.0360

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	2.06	0.4182	0.0247	0.0000	1.0360
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		0.4182	0.0247	0.0000	1.0360

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	2.06	0.4182	0.0247	0.0000	1.0360
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		0.4182	0.0247	0.0000	1.0360

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

Red Hawk Entertainment Center
El Dorado-Mountain County County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	75.00	1000sqft	0.00	75,000.00	0
Unenclosed Parking Structure	174.00	1000sqft	0.00	174,000.00	0
	0.00		0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	70
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

Project Characteristics -

Land Use - 75,000 square foot entertainment center and 3-level parking garage developed on existing parking garage. No grading or site prep required.

Construction Phase - No demolition, site preparation, grading or paving required.

Grading - No grading required.

Architectural Coating - Architectural Coating per EDCAQMD Rule 215

Area Coating - Architectural Coating per EDCAQMD Rule 215

Water And Wastewater - No additional outdoor water use. Indoor water use based on engineer's estimate.

Area Mitigation - Architectural Coating per EDCAQMD Rule 215

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	250	50
tblConstructionPhase	NumDays	0.00	230.00
tblConstructionPhase	NumDays	0.00	18.00
tblConstructionPhase	PhaseEndDate	9/30/2021	8/18/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/13/2022
tblConstructionPhase	PhaseStartDate	10/1/2021	8/19/2022
tblLandUse	LotAcreage	24.11	0.00
tblLandUse	LotAcreage	3.99	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.6408	12.7728	13.7051	0.0347	1.5907	1.4714	2.0605	0.4274	1.3848	0.8601	0.0000	3,475.7190	3,475.7190	0.4131	0.0000	3,486.0466
2022	20.9999	11.5544	13.1047	0.0342	1.5907	0.3924	1.9831	0.4274	0.3615	0.7889	0.0000	3,422.1297	3,422.1297	0.4080	0.0000	3,432.3296
Maximum	20.9999	12.7728	13.7051	0.0347	1.5907	1.4714	2.0605	0.4274	1.3848	0.8601	0.0000	3,475.7190	3,475.7190	0.4131	0.0000	3,486.0466

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.6408	12.7728	13.7051	0.0347	1.5907	1.4714	2.0605	0.4274	1.3848	0.8601	0.0000	3,475.7190	3,475.7190	0.4131	0.0000	3,486.0466
2022	20.9999	11.5544	13.1047	0.0342	1.5907	0.3924	1.9831	0.4274	0.3615	0.7889	0.0000	3,422.1297	3,422.1297	0.4080	0.0000	3,432.3296
Maximum	20.9999	12.7728	13.7051	0.0347	1.5907	1.4714	2.0605	0.4274	1.3848	0.8601	0.0000	3,475.7190	3,475.7190	0.4131	0.0000	3,486.0466

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Energy	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Mobile	1.5369	3.6162	12.7485	0.0348	2.9864	0.0340	3.0204	0.7980	0.0318	0.8299		3,485.6889	3,485.6889	0.1151		3,488.5670
Total	3.7230	3.6872	12.8334	0.0352	2.9864	0.0395	3.0259	0.7980	0.0373	0.8353		3,570.5943	3,570.5943	0.1169	1.5600e-003	3,573.9803

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Energy	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Mobile	1.5369	3.6162	12.7485	0.0348	2.9864	0.0340	3.0204	0.7980	0.0318	0.8299		3,485.6889	3,485.6889	0.1151		3,488.5670
Total	3.3156	3.6872	12.8334	0.0352	2.9864	0.0395	3.0259	0.7980	0.0373	0.8353		3,570.5943	3,570.5943	0.1169	1.5600e-003	3,573.9803

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	9/30/2021	5	0	
2	Site Preparation	Site Preparation	10/1/2021	9/30/2021	5	0	
3	Grading	Grading	10/1/2021	9/30/2021	5	0	
4	Building Construction	Building Construction	10/1/2021	8/18/2022	5	230	
5	Paving	Paving	10/1/2021	9/30/2021	5	0	
6	Architectural Coating	Architectural Coating	8/19/2022	9/13/2022	5	18	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,500; Non-Residential Outdoor: 37,500; Striped Parking Area: 10,440 (Architectural Coating – sqft)****OffRoad Equipment**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	105.00	41.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.2 Demolition - 2021

Mitigated Construction Off-Site

[illegible]

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

[illegible]

3.4 Grading - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.4 Grading - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1320	4.4116	1.3910	0.0101	0.2495	0.0129	0.2624	0.0717	0.0123	0.0840		1,057.2910	1,057.2910	0.0191		1,057.7676
Worker	0.7338	0.3762	5.0505	0.0132	1.3412	9.4000e-003	1.3506	0.3557	8.6600e-003	0.3643		1,315.2122	1,315.2122	0.0372		1,316.1433
Total	0.8659	4.7879	6.4414	0.0233	1.5907	0.0223	1.6129	0.4274	0.0210	0.4484		2,372.5032	2,372.5032	0.0563		2,373.9108

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1320	4.4116	1.3910	0.0101	0.2495	0.0129	0.2624	0.0717	0.0123	0.0840		1,057.2910	1,057.2910	0.0191		1,057.7676
Worker	0.7338	0.3762	5.0505	0.0132	1.3412	9.4000e-003	1.3506	0.3557	8.6600e-003	0.3643		1,315.2122	1,315.2122	0.0372		1,316.1433
Total	0.8659	4.7879	6.4414	0.0233	1.5907	0.0223	1.6129	0.4274	0.0210	0.4484		2,372.5032	2,372.5032	0.0563		2,373.9108

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1236	4.1895	1.3089	0.0101	0.2495	0.0114	0.2609	0.0717	0.0109	0.0827		1,049.7095	1,049.7095	0.0175		1,050.1477
Worker	0.6936	0.3391	4.6431	0.0127	1.3412	9.0800e-003	1.3503	0.3557	8.3600e-003	0.3640		1,268.4809	1,268.4809	0.0334		1,269.3167
Total	0.8172	4.5287	5.9520	0.0228	1.5907	0.0205	1.6112	0.4274	0.0193	0.4467		2,318.1904	2,318.1904	0.0510		2,319.4644

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1236	4.1895	1.3089	0.0101	0.2495	0.0114	0.2609	0.0717	0.0109	0.0827		1,049.7095	1,049.7095	0.0175		1,050.1477
Worker	0.6936	0.3391	4.6431	0.0127	1.3412	9.0800e-003	1.3503	0.3557	8.3600e-003	0.3640		1,268.4809	1,268.4809	0.0334		1,269.3167
Total	0.8172	4.5287	5.9520	0.0228	1.5907	0.0205	1.6112	0.4274	0.0193	0.4467		2,318.1904	2,318.1904	0.0510		2,319.4644

3.6 Paving - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.6 Paving - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.6567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	20.8612	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1387	0.0678	0.9286	2.5500e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		253.6962	253.6962	6.6900e-003		253.8633
Total	0.1387	0.0678	0.9286	2.5500e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		253.6962	253.6962	6.6900e-003		253.8633

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.6567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	20.8612	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1387	0.0678	0.9286	2.5500e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		253.6962	253.6962	6.6900e-003		253.8633
Total	0.1387	0.0678	0.9286	2.5500e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		253.6962	253.6962	6.6900e-003		253.8633

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5369	3.6162	12.7485	0.0348	2.9864	0.0340	3.0204	0.7980	0.0318	0.8299		3,485.6889	3,485.6889	0.1151		3,488.5670
Unmitigated	1.5369	3.6162	12.7485	0.0348	2.9864	0.0340	3.0204	0.7980	0.0318	0.8299		3,485.6889	3,485.6889	0.1151		3,488.5670

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	803.25	803.25	803.25	1,410,456	1,410,456
Unenclosed Parking Structure	0.00	0.00	0.00		
Total	803.25	803.25	803.25	1,410,456	1,410,456

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	14.70	6.60	6.60	0.00	81.00	19.00	66	28	6
Unenclosed Parking Structure	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Arena	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Unenclosed Parking Structure	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
NaturalGas Unmitigated	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	721.233	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0.721233	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

6.0 Area Detail**6.1 Mitigation Measures Area**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Unmitigated	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3700e-003	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Total	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1019					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3700e-003	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Total	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Red Hawk Entertainment Center - El Dorado-Mountain County County, Summer

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

8.0 Waste Detail

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

Red Hawk Entertainment Center
El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	75.00	1000sqft	0.00	75,000.00	0
Unenclosed Parking Structure	174.00	1000sqft	0.00	174,000.00	0
	0.00		0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	70
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

Project Characteristics -

Land Use - 75,000 square foot entertainment center and 3-level parking garage developed on existing parking garage. No grading or site prep required.

Construction Phase - No demolition, site preparation, grading or paving required.

Grading - No grading required.

Architectural Coating - Architectural Coating per EDCAQMD Rule 215

Area Coating - Architectural Coating per EDCAQMD Rule 215

Water And Wastewater - No additional outdoor water use. Indoor water use based on engineer's estimate.

Area Mitigation - Architectural Coating per EDCAQMD Rule 215

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	50.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	250	50
tblConstructionPhase	NumDays	0.00	230.00
tblConstructionPhase	NumDays	0.00	18.00
tblConstructionPhase	PhaseEndDate	9/30/2021	8/18/2022
tblConstructionPhase	PhaseEndDate	9/30/2021	9/13/2022
tblConstructionPhase	PhaseStartDate	10/1/2021	8/19/2022
tblLandUse	LotAcreage	24.11	0.00
tblLandUse	LotAcreage	3.99	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

2.0 Emissions Summary**2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.7016	12.9413	13.3792	0.0333	1.5907	1.4714	2.0609	0.4274	1.3848	0.8605	0.0000	3,327.7744	3,327.7744	0.4114	0.0000	3,338.0598
2022	21.0101	11.7060	12.7822	0.0328	1.5907	0.3929	1.9835	0.4274	0.3619	0.7893	0.0000	3,278.7187	3,278.7187	0.4064	0.0000	3,288.8789
Maximum	21.0101	12.9413	13.3792	0.0333	1.5907	1.4714	2.0609	0.4274	1.3848	0.8605	0.0000	3,327.7744	3,327.7744	0.4114	0.0000	3,338.0598

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.7016	12.9413	13.3792	0.0333	1.5907	1.4714	2.0609	0.4274	1.3848	0.8605	0.0000	3,327.7744	3,327.7744	0.4114	0.0000	3,338.0598
2022	21.0101	11.7060	12.7822	0.0328	1.5907	0.3929	1.9835	0.4274	0.3619	0.7893	0.0000	3,278.7187	3,278.7187	0.4064	0.0000	3,288.8789
Maximum	21.0101	12.9413	13.3792	0.0333	1.5907	1.4714	2.0609	0.4274	1.3848	0.8605	0.0000	3,327.7744	3,327.7744	0.4114	0.0000	3,338.0598

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Energy	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Mobile	1.2181	3.9135	13.0952	0.0321	2.9864	0.0342	3.0206	0.7980	0.0320	0.8300		3,212.3081	3,212.3081	0.1167		3,215.2249
Total	3.4042	3.9844	13.1800	0.0325	2.9864	0.0397	3.0261	0.7980	0.0375	0.8355		3,297.2135	3,297.2135	0.1184	1.5600e-003	3,300.6381

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Energy	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Mobile	1.2181	3.9135	13.0952	0.0321	2.9864	0.0342	3.0206	0.7980	0.0320	0.8300		3,212.3081	3,212.3081	0.1167		3,215.2249
Total	2.9967	3.9844	13.1800	0.0325	2.9864	0.0397	3.0261	0.7980	0.0375	0.8355		3,297.2135	3,297.2135	0.1184	1.5600e-003	3,300.6381

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	9/30/2021	5	0	
2	Site Preparation	Site Preparation	10/1/2021	9/30/2021	5	0	
3	Grading	Grading	10/1/2021	9/30/2021	5	0	
4	Building Construction	Building Construction	10/1/2021	8/18/2022	5	230	
5	Paving	Paving	10/1/2021	9/30/2021	5	0	
6	Architectural Coating	Architectural Coating	8/19/2022	9/13/2022	5	18	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 112,500; Non-Residential Outdoor: 37,500; Striped Parking Area: 10,440 (Architectural Coating – sqft)****OffRoad Equipment**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	105.00	41.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.2 Demolition - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.2 Demolition - 2021

Mitigated Construction Off-Site

[illegible]

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

[illegible]

3.4 Grading - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.4 Grading - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.4 Grading - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1399	4.4915	1.5863	9.9300e-003	0.2495	0.0133	0.2628	0.0717	0.0128	0.0845		1,036.8025	1,036.8025	0.0208		1,037.3234
Worker	0.7868	0.4648	4.5293	0.0119	1.3412	9.4000e-003	1.3506	0.3557	8.6600e-003	0.3643		1,187.7562	1,187.7562	0.0338		1,188.6005
Total	0.9266	4.9563	6.1156	0.0219	1.5907	0.0227	1.6134	0.4274	0.0214	0.4488		2,224.5587	2,224.5587	0.0546		2,225.9240

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1399	4.4915	1.5863	9.9300e-003	0.2495	0.0133	0.2628	0.0717	0.0128	0.0845		1,036.8025	1,036.8025	0.0208		1,037.3234
Worker	0.7868	0.4648	4.5293	0.0119	1.3412	9.4000e-003	1.3506	0.3557	8.6600e-003	0.3643		1,187.7562	1,187.7562	0.0338		1,188.6005
Total	0.9266	4.9563	6.1156	0.0219	1.5907	0.0227	1.6134	0.4274	0.0214	0.4488		2,224.5587	2,224.5587	0.0546		2,225.9240

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1308	4.2615	1.4898	9.8600e-003	0.2495	0.0119	0.2614	0.0717	0.0113	0.0831		1,029.2270	1,029.2270	0.0192		1,029.7061
Worker	0.7448	0.4188	4.1397	0.0115	1.3412	9.0800e-003	1.3503	0.3557	8.3600e-003	0.3640		1,145.5524	1,145.5524	0.0302		1,146.3075
Total	0.8755	4.6802	5.6295	0.0214	1.5907	0.0209	1.6116	0.4274	0.0197	0.4471		2,174.7794	2,174.7794	0.0494		2,176.0137

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1308	4.2615	1.4898	9.8600e-003	0.2495	0.0119	0.2614	0.0717	0.0113	0.0831		1,029.2270	1,029.2270	0.0192		1,029.7061
Worker	0.7448	0.4188	4.1397	0.0115	1.3412	9.0800e-003	1.3503	0.3557	8.3600e-003	0.3640		1,145.5524	1,145.5524	0.0302		1,146.3075
Total	0.8755	4.6802	5.6295	0.0214	1.5907	0.0209	1.6116	0.4274	0.0197	0.4471		2,174.7794	2,174.7794	0.0494		2,176.0137

3.6 Paving - 2021

Unmitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.6 Paving - 2021

Unmitigated Construction Off-Site

[illegible]

Mitigated Construction On-Site

[illegible]

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.7 Architectural Coating - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.6567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	20.8612	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.7 Architectural Coating - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1490	0.0838	0.8280	2.3000e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		229.1105	229.1105	6.0400e-003		229.2615
Total	0.1490	0.0838	0.8280	2.3000e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		229.1105	229.1105	6.0400e-003		229.2615

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	20.6567					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	20.8612	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

3.7 Architectural Coating - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1490	0.0838	0.8280	2.3000e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		229.1105	229.1105	6.0400e-003		229.2615
Total	0.1490	0.0838	0.8280	2.3000e-003	0.2682	1.8200e-003	0.2701	0.0711	1.6700e-003	0.0728		229.1105	229.1105	6.0400e-003		229.2615

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2181	3.9135	13.0952	0.0321	2.9864	0.0342	3.0206	0.7980	0.0320	0.8300		3,212.3081	3,212.3081	0.1167		3,215.2249
Unmitigated	1.2181	3.9135	13.0952	0.0321	2.9864	0.0342	3.0206	0.7980	0.0320	0.8300		3,212.3081	3,212.3081	0.1167		3,215.2249

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	803.25	803.25	803.25	1,410,456	1,410,456
Unenclosed Parking Structure	0.00	0.00	0.00		
Total	803.25	803.25	803.25	1,410,456	1,410,456

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	14.70	6.60	6.60	0.00	81.00	19.00	66	28	6
Unenclosed Parking Structure	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Arena	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479
Unenclosed Parking Structure	0.529528	0.038650	0.225199	0.133619	0.030041	0.006237	0.016842	0.009530	0.001608	0.001127	0.005339	0.000802	0.001479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
NaturalGas Unmitigated	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	721.233	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0.721233	7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		7.7800e-003	0.0707	0.0594	4.2000e-004		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003		84.8509	84.8509	1.6300e-003	1.5600e-003	85.3552

6.0 Area Detail**6.1 Mitigation Measures Area**

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Unmitigated	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5093					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3700e-003	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Total	2.1783	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1019					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3700e-003	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581
Total	1.7709	2.3000e-004	0.0255	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.4000e-004		0.0581

Red Hawk Entertainment Center - El Dorado-Mountain County County, Winter

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

8.0 Waste Detail

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Appendix D

Special Status Species List

Table D1: Special-status Species Reported by CNDDDB and USFWS in the Vicinity of the Project Area

Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**
<i>Agelaius tricolor</i>	tricolored blackbird	CT	HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.	REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.
<i>Allium jepsonii</i>	Jepson's onion	CNPS 1B.2	CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	ON SERPENTINE SOILS IN SIERRA FOOTHILLS, VOLCANIC SOIL ON TABLE MTN. ON SLOPES AND FLATS; USU IN AN OPEN AREA. 450-1130M
<i>Andrena blennospermatis</i>	Blennosperma vernal pool andrenid bee	SSC	THIS BEE IS OLIGOLECTIC ON VERNAL POOL BLENNOSPERMA.	BEE'S NEST IN THE UPLANDS AROUND VERNAL POOLS.
<i>Antrozous pallidus</i>	pallid bat	SSC	DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS & FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING.	ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.
<i>Aquila chrysaetos</i>	golden eagle	FP; SSC	ROLLING FOOTHILLS, MOUNTAIN AREAS, SAGE-JUNIPER FLATS, & DESERT.	CLIFF-WALLED CANYONS PROVIDE NESTING HABITAT IN MOST PARTS OF RANGE; ALSO, LARGE TREES IN OPEN AREAS.
<i>Arctostaphylos nissenana</i>	Nissenan manzanita	CNPS 1B.2	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL.	USUALLY ON METAMORPHICS, ASSOCIATED W/ OTHER CHAPARRAL SPECIES. 450-1100 M.
<i>Ardea alba</i>	great egret	SSC	COLONIAL NESTER IN LARGE TREES.	ROOKERY SITES LOCATED NEAR MARSHES, TIDE-FLATS, IRRIGATED PASTURES, AND MARGINS OF RIVERS AND LAKES.
<i>Ardea herodias</i>	great blue heron	SSC	COLONIAL NESTER IN TALL TREES, CLIFFSIDES, AND SEQUESTERED SPOTS ON MARSHES.	ROOKERY SITES IN CLOSE PROXIMITY TO FORAGING AREAS: MARSHES, LAKE MARGINS, TIDE-FLATS, RIVERS AND STREAMS, WET MEADOWS.
<i>Atractelmis wawona</i>	Wawona riffle beetle	SSC	AQUATIC; FOUND IN RIFFLES OF RAPID, SMALL TO MEDIUM CLEAR MOUNTAIN STREAMS; 2000-5000 FT ELEV.	STRONG PREFERENCE FOR INHABITING SUBMERGED AQUATIC MOSSES
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT	ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.	INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.
<i>Calystegia stebbinsii</i>	Stebbins' morning-glory	FE; CE	CHAPARRAL, CISMONTANE WOODLAND.	ON RED CLAY SOILS OF THE PINE HILL FORMATION; GABBRO OR SERPENTINE; OPEN AREAS. 180-725 M.

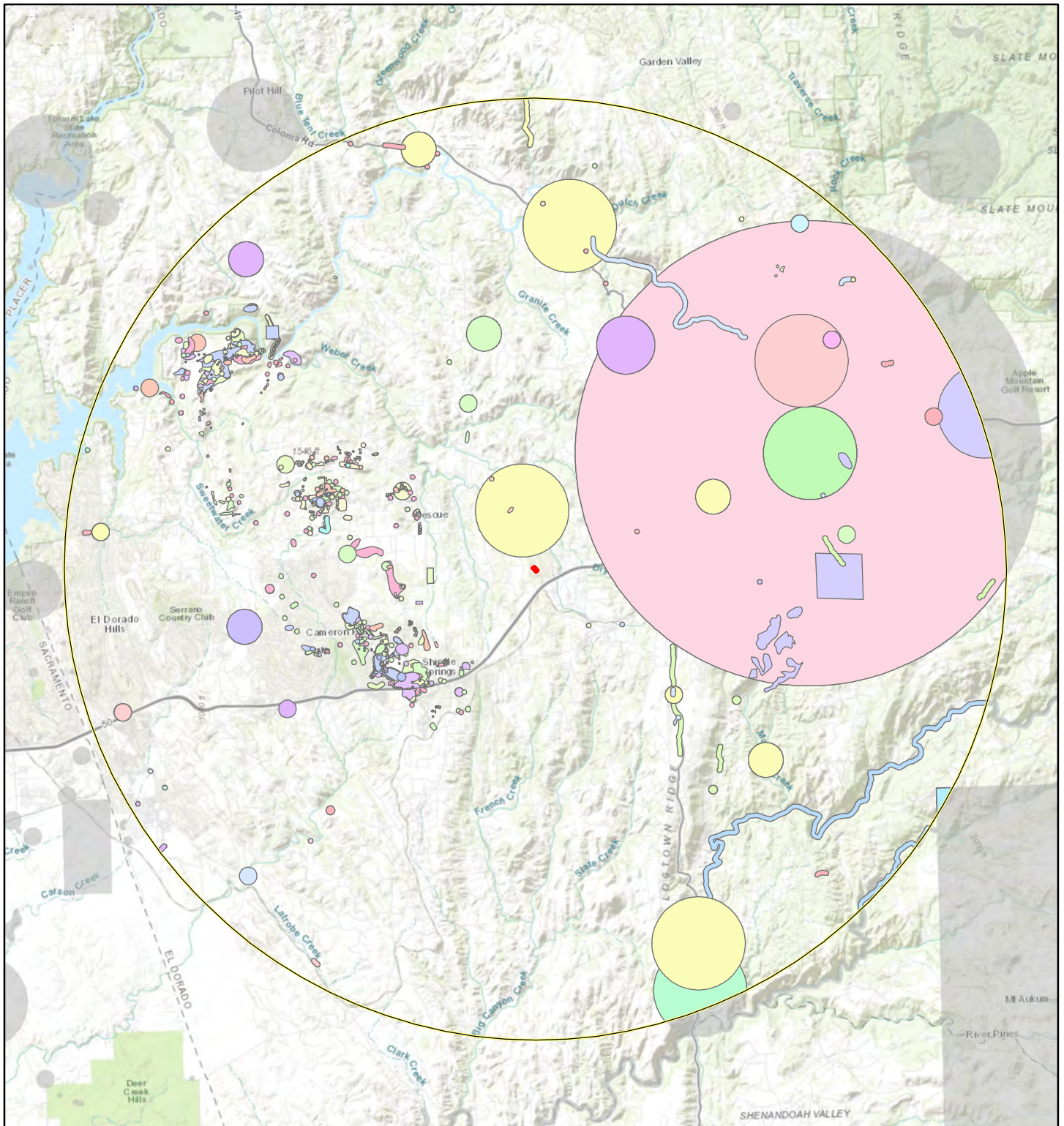
Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**
<i>Carex xerophila</i>	chaparral sedge	CNPS 1B.2	CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	SERPENTINITE, GABBROIC. 275-770 M.
<i>Ceanothus roderickii</i>	Pine Hill ceanothus	FE	CHAPARRAL, CISMONTANE WOODLAND.	GABBROIC SOILS; OFTEN IN "HISTORICALLY DISTURBED" AREAS WITH AN ENSEMBLE OF OTHER RARE PLANTS. 260-630 M.
<i>Chlorogalum grandiflorum</i>	Red Hills soaproot	CNPS 1B.2	CISMONTANE WOODLAND, CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST.	OCCURS FREQUENTLY ON SERPENTINE OR GABBRO, BUT ALSO ON NON-ULTRAMAFIC SUBSTRATES; OFTEN ON "HISTORICALLY DISTURBED" SITE
<i>Clarkia biloba ssp. brandegeae</i>	Brandegee's clarkia	CNPS 4.2	CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	OFTEN IN ROADCUTS. 75-915 M.
<i>Cosumnoperla hypocrena</i>	Cosumnes stripetail	SSC	FOUND IN INTERMITTENT STREAMS ON WESTERN SLOPE OF CENTRAL SIERRA NEVADA FOOTHILLS IN AMERICAN & COSUMNES RIVER BASINS.	NOT EPHEMERAL STREAMS.
<i>Crocانthemum suffrutescens</i>	Bisbee Peak rush-rose	CNPS 3.2	CHAPARRAL.	OFTEN ON SERPENTINE, GABBROIC, OR IONE FORMATION SOILS; IN OPENINGS IN CHAPARRAL. 45-840 M.
<i>Hypomesus transpacificus</i>	Delta smelt	FT	FOUND ONLY IN UPPER SACRAMENTO-SAN JOAQUIN ESTUARY	IT MAINLY INHABITS THE FRESHWATER-SALTWATER MIXING ZONE, EXCEPT DURING ITS SPAWNING SEASON, WHEN IT MIGRATES UPSTREAM TO FRESH WATER
<i>Emys marmorata</i>	western pond turtle	SSC	A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BE	NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYIN
<i>Erethizon dorsatum</i>	North American porcupine	SSC	FORESTED HABITATS IN THE SIERRA NEVADA, CASCADE, AND COAST RANGES, WITH SCATTERED OBSERVATIONS FROM FORESTED AREAS IN THE TRANSVERSE RANGES.	WIDE VARIETY OF CONIFEROUS AND MIXED WOODLAND HABITAT.
<i>Fremontodendron decumbens</i>	Pine Hill flannelbush	FE	CHAPARRAL, CISMONTANE WOODLAND.	ROCKY RIDGES; GABBRO OR SERPENTINE ENDEMIC; OFTEN AMONG ROCKS AND BOULDERS. 425-760 M.
<i>Galium californicum ssp. sierrae</i>	El Dorado bedstraw	FE	CISMONTANE WOODLAND, CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST.	MORE OFTEN IN PINE-OAK WOODLAND THAN IN CHAPARRAL; RESTRICTED TO GABBROIC SOILS. 100-585 M.
<i>Haliaeetus leucocephalus</i>	bald eagle	CE	OCEAN SHORE, LAKE MARGINS, & RIVERS FOR BOTH	NESTS IN LARGE, OLD-GROWTH, OR DOMINANT LIVE TREE W/OPEN BRANCHES, ESPECIALLY

Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**
			NESTING & WINTERING. MOST NESTS WITHIN 1 MI OF WATER.	PONDEROSA PINE. ROOSTS COMMUNALLY IN WINTER
<i>Horkelia parryi</i>	Parry's horkelia	CNPS 1B.2	CHAPARRAL, CISMONTANE WOODLAND.	OPENINGS IN CHAPARRAL OR WOODLAND; ESPECIALLY KNOWN FROM THE IONE FORMATION IN AMADOR COUNTY. 80-1070 M..
<i>Lasionycteris noctivagans</i>	silver-haired bat	SSC	PRIMARILY A COASTAL & MONTANE FOREST DWELLER FEEDING OVER STREAMS, PONDS & OPEN BRUSHY AREAS.	ROOSTS IN HOLLOW TREES, BENEATH EXFOLIATING BARK, ABANDONED WOODPECKER HOLES & RARELY UNDER ROCKS. NEEDS DRINKING WATER.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	CT	INHABITS FRESHWATER MARSHES, WET MEADOWS & SHALLOW MARGINS OF SALTWATER MARSHES BORDERING LARGER BAYS.	NEEDS WATER DEPTHS OF ABOUT 1 INCH THAT DO NOT FLUCTUATE DURING THE YEAR & DENSE VEGETATION FOR NESTING HABITAT.
<i>Myotis yumanensis</i>	Yuma myotis	SSC	OPTIMAL HABITATS ARE OPEN FORESTS AND WOODLANDS WITH SOURCES OF WATER OVER WHICH TO FEED.	DISTRIBUTION IS CLOSELY TIED TO BODIES OF WATER. MATERNITY COLONIES IN CAVES, MINES, BUILDINGS OR CREVICES.
<i>Packera layneae</i>	Layne's ragwort	FT	CHAPARRAL, CISMONTANE WOODLAND.	ULTRAMAFIC SOIL; OCCASIONALLY ALONG STREAMS. 200-1000 M.
<i>Pekania pennanti</i>	fisher - West Coast DPS	SSC	INTERMEDIATE TO LARGE-TREE STAGES OF CONIFEROUS FORESTS & DECIDUOUS-RIPARIAN AREAS WITH HIGH PERCENT CANOPY CLOSURE.	USES CAVITIES, SNAGS, LOGS & ROCKY AREAS FOR COVER & DENNING. NEEDS LARGE AREAS OF MATURE, DENSE FOREST.
<i>Phrynosoma blainvillii</i>	coast horned lizard	SSC	FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.	OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.
<i>Rana boylei</i>	foothill yellow-legged frog	CA candidate	PARTLY-SHADED, SHALLOW STREAMS & RIFFLES WITH A ROCKY SUBSTRATE IN A VARIETY OF HABITATS.	NEED AT LEAST SOME COBBLE-SIZED SUBSTRATE FOR EGG-LAYING. NEED AT LEAST 15 WEEKS TO ATTAIN METAMORPHOSIS.
<i>Rana draytonii</i>	California red-legged frog	FE	LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.
<i>Riparia riparia</i>	bank swallow	CT	COLONIAL NESTER; NESTS PRIMARILY IN RIPARIAN AND OTHER LOWLAND HABITATS WEST OF THE DESERT.	REQUIRES VERTICAL BANKS/CLIFFS WITH FINE-TEXTURED/SANDY SOILS NEAR STREAMS, RIVERS, LAKES, OCEAN TO DIG NESTING HOLE.
<i>Strix nebulosa</i>	great gray owl	CE	RESIDENT OF MIXED CONIFER OR RED FIR FOREST HABITAT, IN OR ON EDGE OF MEADOWS.	REQUIRES LARGE DIAMETER SNAGS IN A FOREST WITH HIGH CANOPY CLOSURE, WHICH PROVIDE A COOL SUB-CANOPY MICROCLIMATE.

Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**
<i>Viburnum ellipticum</i>	oval-leaved viburnum	CNPS 2B.3	CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	215-1400 M.
<i>Wyethia reticulata</i>	El Dorado County mule ears	CNPS 1B.2	CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	STONY RED CLAY AND GABBROIC SOILS; OFTEN IN OPENINGS IN GABBRO CHAPARRAL. 185-630 M.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere. Global Ranking: G1 = Critically Imperiled; G2 = Imperiled; G3 = Vulnerable. State Ranking: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.

**Copied verbatim from CNDDB, unless otherwise noted.



Parking Structure Project Area 10 Mile Buffer

1:190,000 1 inch = 3 miles
 0 3 6 Miles



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files. The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission. Data Sources: California Department of Fish and Wildlife. 2021. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

Special-Status Species Occurrences Map

Red Hawk Casino Parking Structure

Shingle Springs 1949 Quadrangle Photo revised 1973:
Township 10N, Range 10E, Section 29



NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

April 19, 2021

Consultation Code: 08ESMF00-2021-SLI-1591

Event Code: 08ESMF00-2021-E-04645

Project Name: Red Hawk Casino Event Center and Parking Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2021-SLI-1591

Event Code: 08ESMF00-2021-E-04645

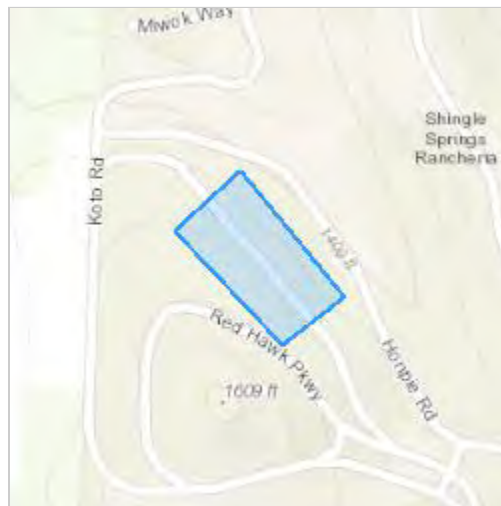
Project Name: Red Hawk Casino Event Center and Parking Expansion

Project Type: DEVELOPMENT

Project Description: The Shingle Springs Band of Miwok Indians proposes to expand their existing garage structure by adding an event center on the top on the northern portion and additional levels of parking on the southern portion.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.695546300000004,-120.90739939120763,14z>



Counties: El Dorado County, California

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
El Dorado Bedstraw <i>Galium californicum ssp. sierrae</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5209	Endangered
Layne's Butterweed <i>Senecio layneae</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4062	Threatened
Pine Hill Ceanothus <i>Ceanothus roderickii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3293	Endangered
Pine Hill Flannelbush <i>Fremontodendron californicum ssp. decumbens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4818	Endangered
Stebbins' Morning-glory <i>Calystegia stebbinsii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3991	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix E
Noise Study



Environmental Noise Assessment

Red Hawk Casino Entertainment Center

El Dorado County, California

June 1, 2021

Project # 210402

Prepared for:

Origin Environmental Planning, LLC
363 Point Road
Hancock, ME 04640

Prepared by:

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INTRODUCTION

Saxelby Acoustics was retained by Origin Environmental Planning to perform a noise study of the addition of an entertainment center to the Red Hawk Casino. The project would be developed above the northern half of the existing parking garage, located on the main same floor as the main casino. The entertainment center building would incorporate additional entertainment and dining options such as a bowling alley, virtual reality gaming suites, indoor go-karting, bar, and meeting rooms. A mezzanine level would be developed over a portion of the main floor. The project also includes expansion of the existing parking garage structure by the addition of three new floors on the southern half of the existing eight-level garage. The Red Hawk Casino Entertainment Center project is located entirely on Tribal land near Highway 50 on Red Hawk Parkway in El Dorado County, California.

The proposed project would primarily include new indoor uses. Any outdoor mechanical equipment would be located on the roof of the new facility and would be shielded from view by rooftop parapets and is unlikely to be audible at the nearest off-site sensitive receptors which are located more than 300 feet to the west. The new facility and parking garage levels would also be shielded from the nearest uses to the west by the intervening existing casino building. Therefore, this analysis focuses primarily on traffic noise due to vehicle circulation on the perimeter road (Koto Road).

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site and existing buildings.



FIGURE 2-1
PROJECT SITE WITH EXISTING AND PROPOSED FACILITIES

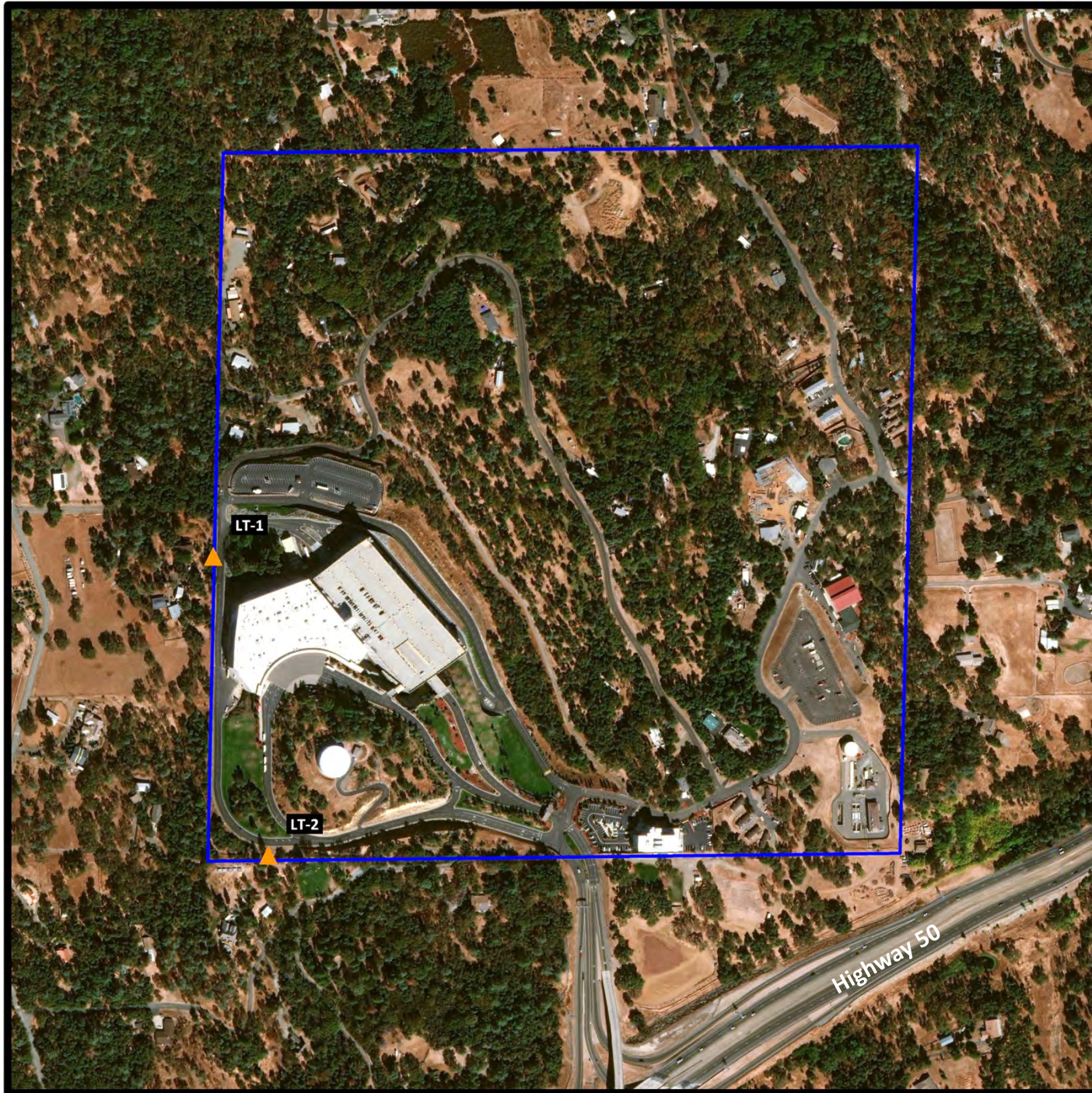
Red Hawk Casino Event Center

El Dorado County, California

Figure 1

Project Site Plan





Red Hawk Casino Event Center

El Dorado County, California

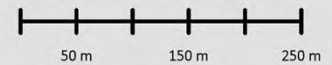
Figure 2

Noise Measurement Sites

Legend

 Project Site

 Noise Measurement - Long Term



Projection: State Plane (California Zone 2) / NAD83 / meters
Rev. Date: 05/26/2020



ENVIRONMENTAL SETTING

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING AND FUTURE NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses located west and south of the project site, outside of the Rancheria boundaries.

EXISTING GENERAL AMBIENT NOISE LEVELS

EXISTING AMBIENT NOISE LEVELS

The existing noise environment in the project area is defined primarily by vehicle traffic on Koto Road and HVAC noise from existing Red Hawk Casino facilities.

To quantify the existing ambient noise environment on the project site, Saxelby Acoustics conducted a continuous noise measurement survey. The noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meter was programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max} , represents the highest noise level measured. The average value, denoted L_{eq} , represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50} , represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) Model 831 precision integrating sound level meter was used for the ambient noise level measurement survey. The meter was calibrated before and after use with a B&K Model 4230 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Site	Date	Average Measured Hourly Noise Levels, dBA						
		L _{dn}	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm – 7:00 am)		
			L _{eq}	L ₅₀	L _{max}	L _{eq}	L ₅₀	L _{max}
Continuous 24-hour Noise Measurement Site								
LT-1	Saturday (4/10/2021)	71	69	56	92	64	54	86
	Sunday (4/11/2021)	71	67	55	93	65	55	88
LT-2	Saturday (4/17/2021)	63	60	52	82	56	48	78
	Sunday (4/18/2021)	62	57	48	80	56	49	78
Source: Saxelby Acoustics – 2021								

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

Off-Site Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors with and without the proposed project for existing, baseline, and cumulative traffic conditions.

Existing, baseline, and cumulative noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calven reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn} , it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the traffic engineer, truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing, Baseline, and Cumulative conditions which would result from the project are provided in terms of L_{dn} .

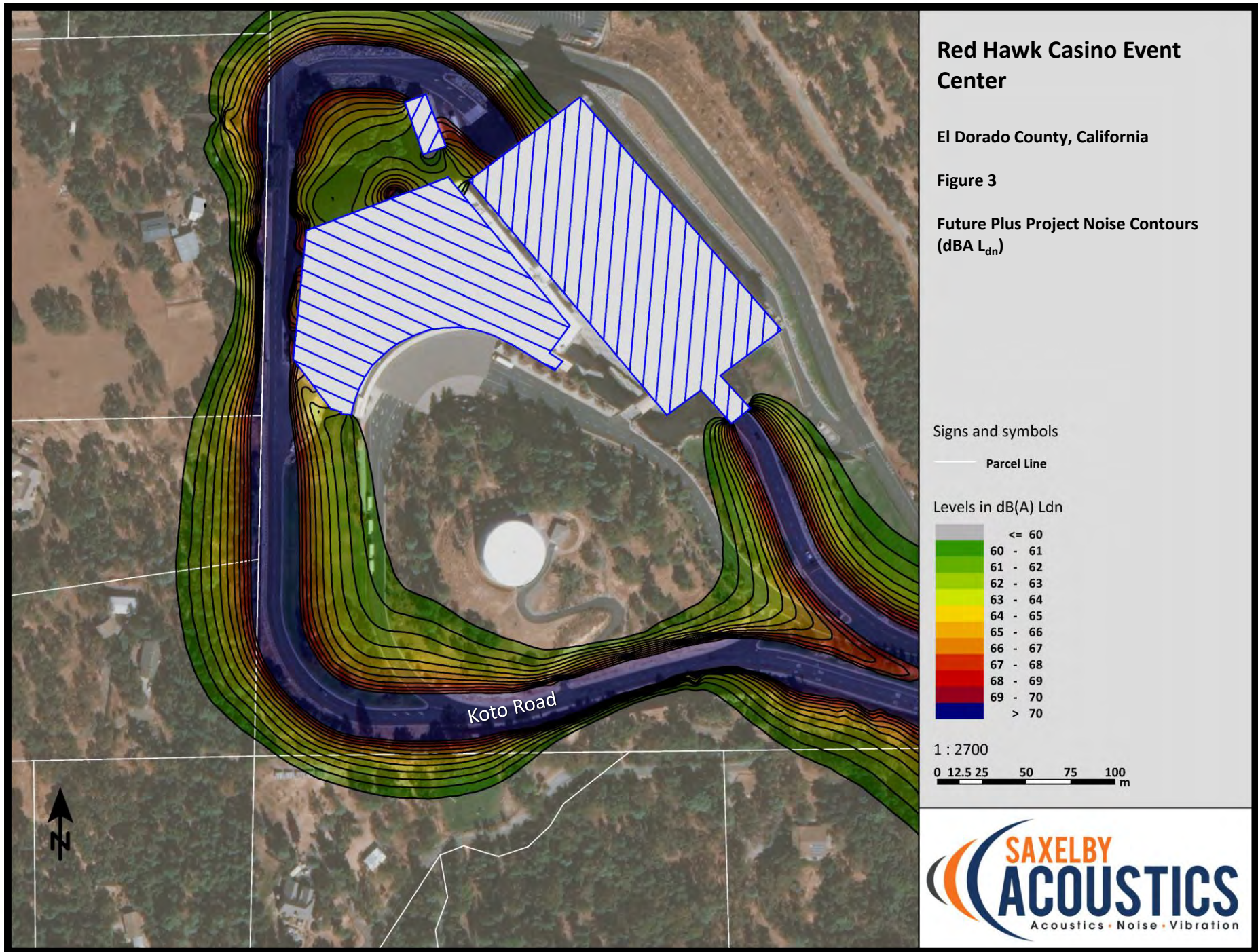
Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment.

Table 3 summarizes the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic modeling.

TABLE 3: PREDICTED EXTERIOR NOISE LEVEL (dBA L_{DN}) AT CLOSEST SENSITIVE RECEPTORS

Condition	Koto Road*	Red Hawk Parkway*
Existing	70.6 dBA	50.4 dBA
Existing + Project	71.8 dBA	51.5 dBA
Change	1.2 dBA	1.0 dBA
Baseline	70.9 dBA	50.8 dBA
Baseline + Project	72.1 dBA	51.7 dBA
Change	1.1 dBA	0.9 dBA
Cumulative	71.1 dBA	51.0 dBA
Cumulative + Project	72.2 dBA	51.9 dBA
Change	1.1 dBA	0.9 dBA
*Predicted noise levels are at the closest receptor to each roadway		

Based upon the **Table 3** data, the proposed project is predicted to result in an increase in a maximum traffic noise level increase of 1.2 dBA. **Figure 3** shows the future transportation noise level contours due to future Red Hawk traffic.



CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 4**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 4: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

Table 5 shows the typical vibration levels produced by construction equipment.

TABLE 5: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: *Transit Noise and Vibration Impact Assessment Guidelines*. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

Relevant regulations for the off-Reservation environment are discussed below. The Reservation is not subject to the State and local regulations.

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project. Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

STATE

There are no state regulations related to noise that apply to the Proposed Project. The California Code of Regulations has guidelines for evaluating the compatibility of various off-Reservation land uses as a function of community noise exposure. The State also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

LOCAL

The El Dorado County General Plan establishes maximum allowable noise exposure for sensitive land uses affected by transportation noise sources. **Table 6** below shows the El Dorado County Land Use Compatibility Chart.

TABLE 6: MAXIMUM ALLOWABLE NOISE EXPOSURE FOR TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas ¹ L _{dn} /CNEL, dB	Interior Spaces	
		L _{dn} /CNEL, dB	L _{eq} , dB ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60 ³	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--
Notes: ¹ In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L _{dn} shall be applied at the building facade, in addition to a 60 dB L _{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L _{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L _{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement. ² As determined for a typical worst-case hour during periods of use. ³ Where it is not possible to reduce noise in outdoor activity areas to 60 dB L _{dn} /CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L _{dn} /CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.			

Criteria for Acceptable Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including

ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 5**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 7 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: *Transportation Related Earthborne Vibrations*. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

METHODOLOGY

While projects located on Reservation lands are exempt from local noise-related standards and policies, a discussion of local noise standards and policies is appropriate for potential off-Reservation noise impacts. Specifically, the El Dorado County Code establishes noise standards for noise-sensitive land uses affected by transportation noise sources. Adjacent noise-sensitive single-family receptors are located within the unincorporated area. Noise level thresholds and standards applied to studied receptors would be in accordance with the jurisdiction within which they are located and specified for reference within the impact analysis.

THRESHOLDS OF SIGNIFICANCE

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The El Dorado County General Plan outlines criteria for determination of significant impacts due to noise.

- Policy 6.5.1.12 When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.
- A. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant;
 - B. Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and
 - C. Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

IMPACT 1: WOULD THE PROJECT GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

Traffic Noise Increases

The El Dorado County guidelines specify criteria to determine the significance of traffic noise impacts. Where existing traffic noise levels are less than 60 dB L_{dn} , at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in roadway noise levels will be considered significant. The maximum increase is traffic noise at the nearest sensitive receptor is predicted to be 1.2 dBA as shown in **Table 3**. Since the existing noise levels due to traffic are above 65 dBA, an increase of 1.5 dBA or greater would be required to cause a significant impact.

Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 4**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Construction activities would also be temporary in nature and are anticipated to occur during normal daytime working hours.

The nearest residential uses are located approximately 600 feet to the west, as measured from the center of the construction of the entertainment center. At this distance, maximum construction noise levels would be in the range of 35-49 dBA L_{eq} and 55-69 dBA L_{max} at the nearest residential uses. This could exceed the County's 60 dBA L_{max} construction noise level limits, as outlined in Table 6-5 of the County's General Plan, shown below in **Table 8**. However, as stated in the County General Plan Policy 6.5.1.11 and Chapter 130.37 of the County Code, the standards outlined in Table 6-5 do not apply to noise levels generated by construction activity that occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally recognized holidays.

TABLE 8: EL DORADO COUNTY CONSTRUCTION NOISE STANDARDS

TABLE 6-5 MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NONTRANSPORTATION NOISE SOURCES IN RURAL REGIONS— CONSTRUCTION NOISE			
Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 am-7 pm	50	60
	7 pm-10 pm	45	55
	10 pm-7 am	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 am-7 pm	65	75
	7 pm -7 am	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 am-7 pm	65	75
	7 pm -7 am	60	70

While daytime construction noise is exempt under the County policies, mitigation measures have been identified to minimize noise levels due to construction activities.

Mitigation Measure(s)

MM (1) The project contractor shall ensure that the following construction noise BMPs are met on-site during all phases of construction:

- All equipment driven by internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed “package” equipment (e.g., arc welders, air compressors) shall be equipped with shrouds and noise-control features that are readily available for that type of equipment.*
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.*
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.*
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.*
- Unnecessary idling of internal combustion engines shall be prohibited.*
- Construction staging areas shall be established at locations that would create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.*
- Construction site and access road speed limits shall be established and enforced during the construction period.*
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.*
- Project-related public address or music systems shall not be audible at any adjacent receptor.*
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.*
- The construction contractor shall designate a “noise disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall be responsible for determining the cause of the noise complaint (e.g., starting too early, poor muffler, etc.) and instituting reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

IMPACT 2: WOULD THE PROJECT GENERATE EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 5** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

IMPACT 3: FOR A PROJECT LOCATED WITHIN THE VICINITY OF A PRIVATE AIRSTRIP OR AN AIRPORT LAND USE PLAN OR, WHERE SUCH A PLAN HAS NOT BEEN ADOPTED, WITHIN TWO MILES OF A PUBLIC AIRPORT OR PUBLIC USE AIRPORT, WOULD THE PROJECT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS?

There are no airports in the project vicinity. Therefore, this impact is not applicable to the proposed project.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B: Continuous Ambient Noise Measurement Results



Appendix B1: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Saturday, April 10, 2021	0:00	65	91	55	47
Saturday, April 10, 2021	1:00	65	87	55	46
Saturday, April 10, 2021	2:00	63	79	56	46
Saturday, April 10, 2021	3:00	63	89	50	45
Saturday, April 10, 2021	4:00	60	78	49	45
Saturday, April 10, 2021	5:00	64	88	49	46
Saturday, April 10, 2021	6:00	59	85	49	46
Saturday, April 10, 2021	7:00	65	96	49	46
Saturday, April 10, 2021	8:00	65	91	51	47
Saturday, April 10, 2021	9:00	64	79	52	48
Saturday, April 10, 2021	10:00	64	85	53	47
Saturday, April 10, 2021	11:00	66	98	50	47
Saturday, April 10, 2021	12:00	63	82	54	48
Saturday, April 10, 2021	13:00	66	94	55	49
Saturday, April 10, 2021	14:00	66	94	57	49
Saturday, April 10, 2021	15:00	66	85	58	49
Saturday, April 10, 2021	16:00	77	108	61	50
Saturday, April 10, 2021	17:00	67	93	59	49
Saturday, April 10, 2021	18:00	70	101	59	49
Saturday, April 10, 2021	19:00	69	96	60	50
Saturday, April 10, 2021	20:00	65	86	60	50
Saturday, April 10, 2021	21:00	67	92	60	49
Saturday, April 10, 2021	22:00	67	89	62	51
Saturday, April 10, 2021	23:00	68	92	61	50

Statistics	Leq	Lmax	L50	L90
Day Average	69	92	56	48
Night Average	64	86	54	47
Day Low	63	79	49	46
Day High	77	108	61	50
Night Low	59	78	49	45
Night High	68	92	62	51
Ldn	71	Day %		84
CNEL	72	Night %		16

Site: LT-1

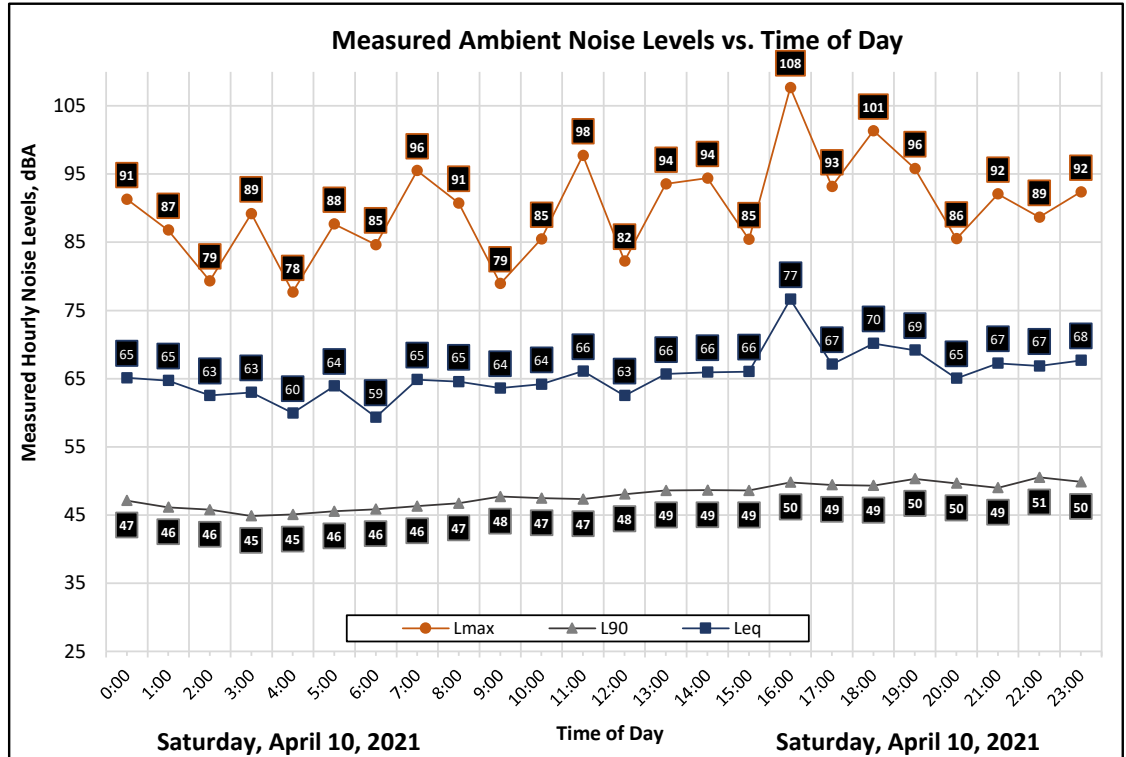
Project: Red Hawk Casino Event Center

Location: Northern Project Boundary

Coordinates: 38.6962274°, -120.9095293°

Meter: LDL 820-2

Calibrator: CAL200



Appendix B2: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Sunday, April 11, 2021	0:00	69	96	60	49
Sunday, April 11, 2021	1:00	66	88	59	49
Sunday, April 11, 2021	2:00	68	97	59	48
Sunday, April 11, 2021	3:00	63	86	53	46
Sunday, April 11, 2021	4:00	65	90	52	46
Sunday, April 11, 2021	5:00	59	75	49	45
Sunday, April 11, 2021	6:00	62	85	49	46
Sunday, April 11, 2021	7:00	60	86	48	45
Sunday, April 11, 2021	8:00	62	88	49	47
Sunday, April 11, 2021	9:00	61	82	49	46
Sunday, April 11, 2021	10:00	68	98	56	48
Sunday, April 11, 2021	11:00	65	94	58	47
Sunday, April 11, 2021	12:00	68	97	53	48
Sunday, April 11, 2021	13:00	68	98	53	48
Sunday, April 11, 2021	14:00	73	102	59	48
Sunday, April 11, 2021	15:00	68	97	59	49
Sunday, April 11, 2021	16:00	63	84	57	49
Sunday, April 11, 2021	17:00	65	89	57	49
Sunday, April 11, 2021	18:00	65	89	57	49
Sunday, April 11, 2021	19:00	70	101	56	48
Sunday, April 11, 2021	20:00	66	89	57	48
Sunday, April 11, 2021	21:00	69	97	56	49
Sunday, April 11, 2021	22:00	66	90	56	48
Sunday, April 11, 2021	23:00	64	86	55	48

Statistics	L _{eq}	L _{max}	L ₅₀	L ₉₀
Day Average	67	93	55	48
Night Average	65	88	55	47
Day Low	60	82	48	45
Day High	73	102	59	49
Night Low	59	75	49	45
Night High	69	97	60	49
Ldn	72	Day %		75
CNEL	72	Night %		25

Site: LT-1

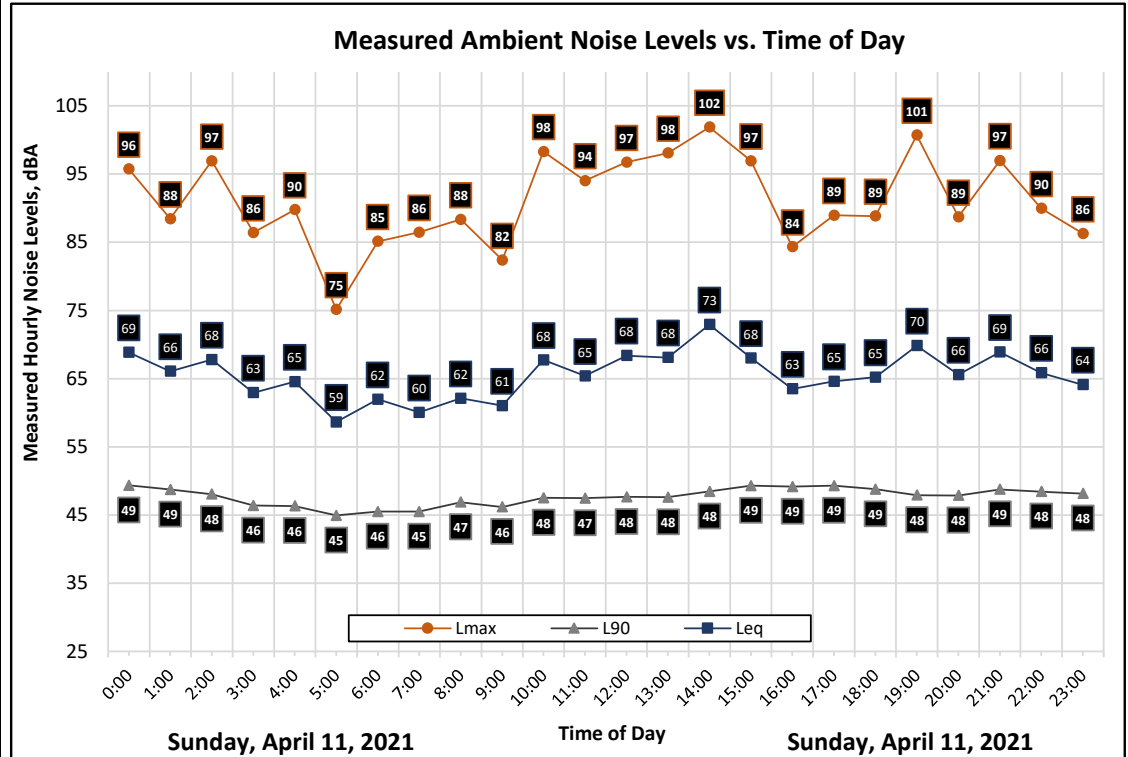
Project: Red Hawk Casino Event Center

Meter: LDL 820-2

Location: Northern Project Boundary

Calibrator: CAL200

Coordinates: 38.6962274°, -120.9095293°



Appendix B3: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Saturday, April 17, 2021	0:00	56	71	50	44
Saturday, April 17, 2021	1:00	56	77	48	43
Saturday, April 17, 2021	2:00	58	86	47	41
Saturday, April 17, 2021	3:00	53	74	45	41
Saturday, April 17, 2021	4:00	54	82	44	41
Saturday, April 17, 2021	5:00	52	74	46	42
Saturday, April 17, 2021	6:00	53	73	47	44
Saturday, April 17, 2021	7:00	52	69	47	45
Saturday, April 17, 2021	8:00	59	86	47	43
Saturday, April 17, 2021	9:00	55	79	46	42
Saturday, April 17, 2021	10:00	63	81	54	47
Saturday, April 17, 2021	11:00	59	80	54	45
Saturday, April 17, 2021	12:00	62	88	51	44
Saturday, April 17, 2021	13:00	59	85	51	45
Saturday, April 17, 2021	14:00	60	86	53	48
Saturday, April 17, 2021	15:00	60	83	56	51
Saturday, April 17, 2021	16:00	58	77	55	50
Saturday, April 17, 2021	17:00	62	90	54	49
Saturday, April 17, 2021	18:00	58	80	52	47
Saturday, April 17, 2021	19:00	60	82	54	47
Saturday, April 17, 2021	20:00	57	78	53	46
Saturday, April 17, 2021	21:00	59	83	52	46
Saturday, April 17, 2021	22:00	58	82	54	47
Saturday, April 17, 2021	23:00	59	85	54	47

Statistics	Leq	Lmax	L50	L90
Day Average	60	82	52	46
Night Average	56	78	48	43
Day Low	52	69	46	42
Day High	63	90	56	51
Night Low	52	71	44	41
Night High	59	86	54	47
Ldn	63	Day %		81
CNEL	63	Night %		19

Site: LT-2

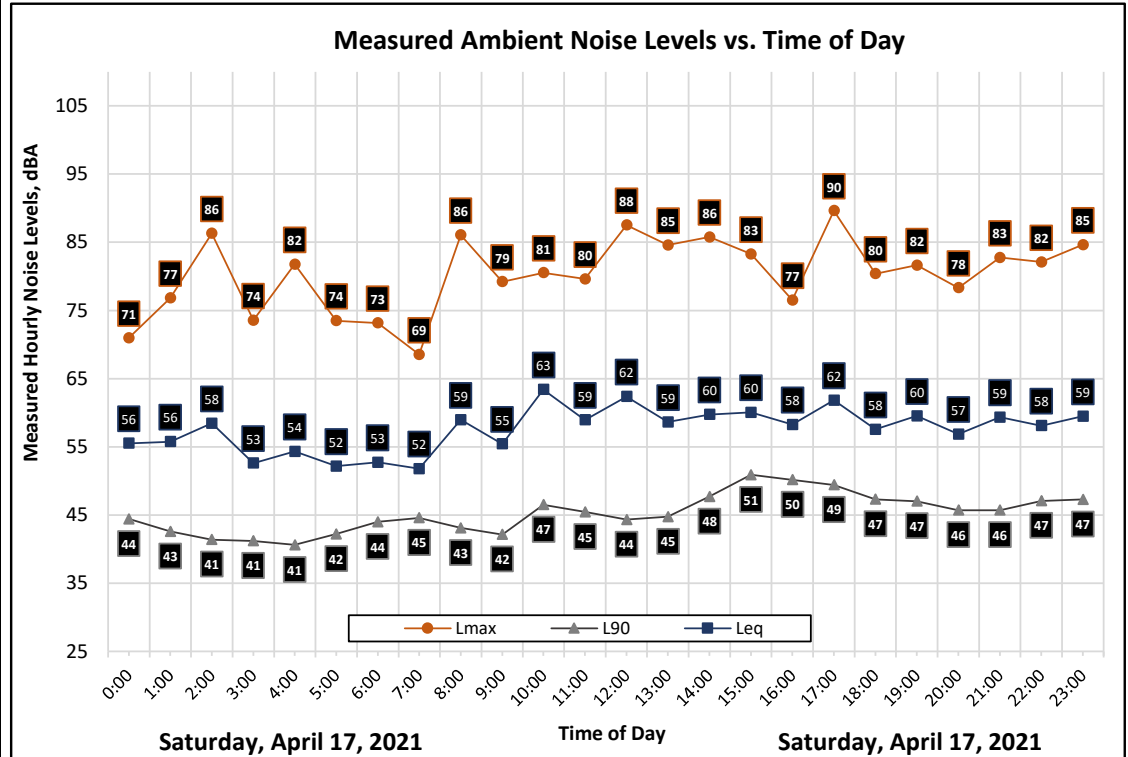
Project: Red Hawk Casino Event Center

Meter: LDL 820-2

Location: Southern Project Boundary

Calibrator: CAL200

Coordinates: 38.6931296°, -120.9088503°



Appendix B4: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Sunday, April 18, 2021	0:00	59	83	52	45
Sunday, April 18, 2021	1:00	56	76	51	43
Sunday, April 18, 2021	2:00	57	83	50	42
Sunday, April 18, 2021	3:00	55	78	49	42
Sunday, April 18, 2021	4:00	53	76	45	41
Sunday, April 18, 2021	5:00	52	71	45	42
Sunday, April 18, 2021	6:00	55	82	48	44
Sunday, April 18, 2021	7:00	54	82	48	45
Sunday, April 18, 2021	8:00	57	86	49	45
Sunday, April 18, 2021	9:00	58	88	47	43
Sunday, April 18, 2021	10:00	52	69	46	43
Sunday, April 18, 2021	11:00	53	74	46	42
Sunday, April 18, 2021	12:00	54	74	45	42
Sunday, April 18, 2021	13:00	53	73	46	42
Sunday, April 18, 2021	14:00	57	83	47	42
Sunday, April 18, 2021	15:00	56	77	48	42
Sunday, April 18, 2021	16:00	63	92	49	41
Sunday, April 18, 2021	17:00	57	78	49	41
Sunday, April 18, 2021	18:00	60	88	49	41
Sunday, April 18, 2021	19:00	59	88	49	43
Sunday, April 18, 2021	20:00	56	74	53	48
Sunday, April 18, 2021	21:00	56	75	51	45
Sunday, April 18, 2021	22:00	56	77	52	47
Sunday, April 18, 2021	23:00	55	73	51	47

Statistics	L _{eq}	L _{max}	L ₅₀	L ₉₀
Day Average	57	80	48	43
Night Average	56	78	49	44
Day Low	52	69	45	41
Day High	63	92	53	48
Night Low	52	71	45	41
Night High	59	83	52	47
Ldn	62	Day %		73
CNEL	63	Night %		27

Site: LT-2

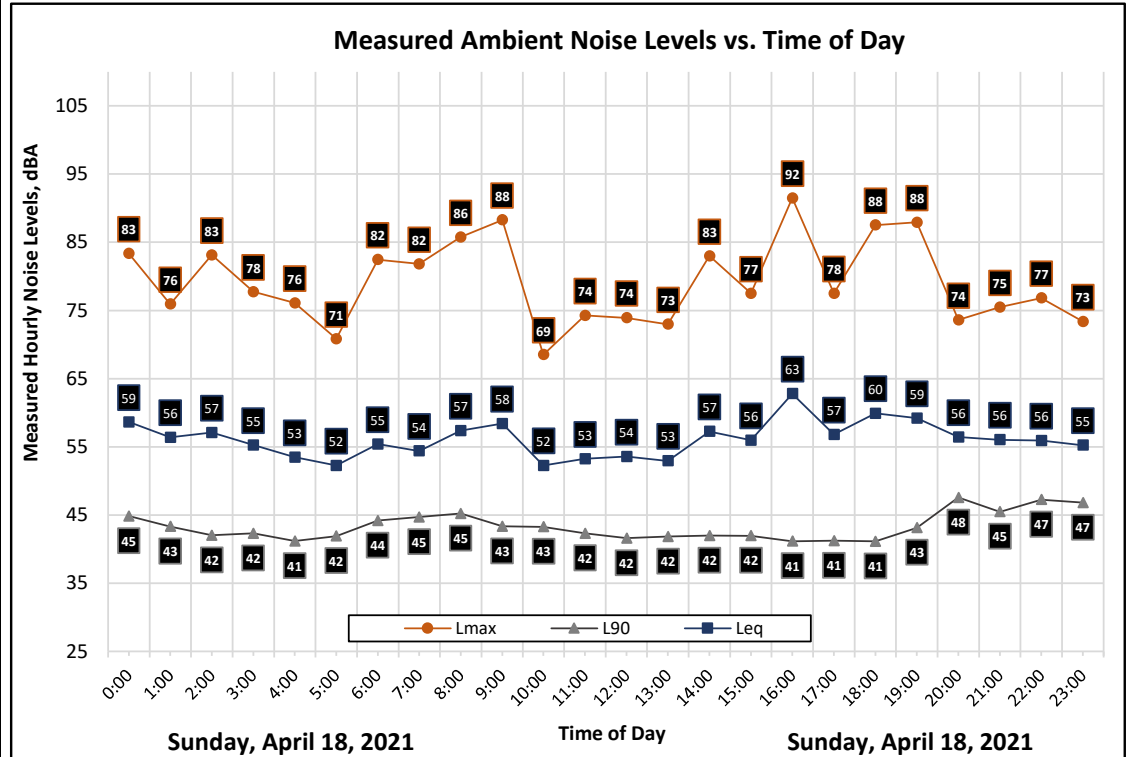
Project: Red Hawk Casino Event Center

Meter: LDL 820-2

Location: Southern Project Boundary

Calibrator: CAL200

Coordinates: 38.6931296°, -120.9088503°



Appendix C: Traffic Noise Calculation Inputs and Results



Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Existing Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset				Level, dBA
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA		
1	Red Hawk Parkway	Entrance	6,270	80	0	20	1.0%	1.0%	35	350	0	81	37	17	50.4	
2	Koto Road	Exit	4,820	80	0	20	1.0%	1.0%	45	20	0	102	47	22	70.6	
</																

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Existing Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Red Hawk Parkway	Entrance	7,920	80	0	20	1.0%	1.0%	35	350	0	94	44	20	51.5
2	Koto Road	Exit	6,360	80	0	20	1.0%	1.0%	45	20	0	123	57	26	71.8

Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Baseline

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Red Hawk Parkway	Entrance	6,760	80	0	20	1.0%	1.0%	35	350	0	85	39	18	50.8
2	Koto Road	Exit	5,210	80	0	20	1.0%	1.0%	45	20	0	107	50	23	70.9

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Baseline Plus Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Red Hawk Parkway	Entrance	8,410	80	0	20	1.0%	1.0%	35	350	0	98	46	21	51.7
2	Koto Road	Exit	6,750	80	0	20	1.0%	1.0%	45	20	0	128	59	27	72.1

Appendix C-5

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Cumulative

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Red Hawk Parkway	Entrance	7,150	80	0	20	1.0%	1.0%	35	350	0	88	41	19	51.0
2	Koto Road	Exit	5,450	80	0	20	1.0%	1.0%	45	20	0	111	51	24	71.1

Appendix C-6

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 210402

Description: Red Hawk Event Center - Cumulative Plus Project

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Red Hawk Parkway	Entrance	8,800	80	0	20	1.0%	1.0%	35	350	0	101	47	22	51.9
2	Koto Road	Exit	6,990	80	0	20	1.0%	1.0%	45	20	0	131	61	28	72.2

Appendix F

Traffic Analysis Worksheets

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel	US 50 EB	
Agency or Company	KDA		From/To	at Red Hawk Parkway	
Date Performed	5/18/2020		Jurisdiction	C/T	
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year	Existing	
Project Description <i>Shingle Springs Rancheria Expansion</i>					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	1884	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		f _{HV} = 1/[1+P _T (E _T -1)+P _R (E _R -1)] 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0 mph	
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV}) 1092 pc/h/ln			Design LOS		
x f _p)			v _p = (V or DDHV) / (PHF x N x f _{HV}) pc/h/ln		
S	65.0 mph		x f _p)		
D = v _p / S	16.8 pc/mi/ln		S		
LOS	B		D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel US 50 WB		
Agency or Company	KDA		From/To at Red Hawk Parkway		
Date Performed	5/18/2020		Jurisdiction C/T		
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year Existing		
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	1350	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	% Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			% RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1/[1 + P_T(E_T - 1) + P_R(E_R - 1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}	mph	
Number of Lanes, N	2		f_{LC}	mph	
Total Ramp Density, TRD		ramps/mi	TRD Adjustment	mph	
FFS (measured)	65.0	mph	FFS	65.0	mph
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV})$			$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV})$		
v_p	783	pc/h/ln	v_p	pc/h/ln	
S	65.0	mph	S	mph	
$D = v_p / S$	12.0	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	B		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel US 50 EB		
Agency or Company	KDA		From/To at Red Hawk Parkway		
Date Performed	5/18/2020		Jurisdiction C/T		
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year Existing		
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS) ☐ Des. (N) ☐ Planning Data					
Flow Inputs					
Volume, V	1518	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		f _{HV} = 1/(1+P _T (E _T - 1) + P _R (E _R - 1)) 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
			mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
880 pc/h/ln			v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
S 65.0 mph			S mph		
D = v _p / S			D = v _p / S		
13.5 pc/mi/ln			pc/mi/ln		
LOS B			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			S - Speed		
V - Hourly volume			D - Density		
v _p - Flow rate			FFS - Free-flow speed		
LOS - Level of service			BFFS - Base free-flow speed		
DDHV - Directional design hour volume			E _R - Exhibits 11-10, 11-12		
			f _{LW} - Exhibit 11-8		
			E _T - Exhibits 11-10, 11-11, 11-13		
			f _{LC} - Exhibit 11-9		
			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel US 50 WB		
Agency or Company	KDA		From/To at Red Hawk Parkway		
Date Performed	5/18/2020		Jurisdiction C/T		
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year Existing		
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	2608	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
			mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
1512 pc/h/ln			v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
S 64.8 mph			pc/h/ln		
D = v _p / S 23.3 pc/mi/ln			S mph		
LOS C			D = v _p / S pc/mi/ln		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes			E _R - Exhibits 11-10, 11-12		
V - Hourly volume			f _{LW} - Exhibit 11-8		
v _p - Flow rate			E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service			f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel	US 50 EB	
Agency or Company	KDA		From/To	at Red Hawk Parkway	
Date Performed	5/18/2020		Jurisdiction	C/T	
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year	Exist plus Apprvd Projects	
Project Description Shingle Springs Rancheria Expansion					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	1911	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			%RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1/[1+P_T(E_T-1)+P_R(E_R-1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}	mph	
Number of Lanes, N	2		f_{LC}	mph	
Total Ramp Density, TRD		ramps/mi	TRD Adjustment	mph	
FFS (measured)	65.0	mph	FFS	65.0	mph
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$			$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$		
S	65.0	mph	S	mph	
$D = v_p / S$	17.0	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	B		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel	US 50 WB	
Agency or Company	KDA		From/To	at Red Hawk Parkway	
Date Performed	5/18/2020		Jurisdiction	C/T	
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year	Exist plus Approved Projects	
Project Description Shingle Springs Rancheria Expansion					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	1369	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			%RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft	f_{LW}	mph	
Rt-Side Lat. Clearance		ft	f_{LC}	mph	
Number of Lanes, N	2		TRD Adjustment	mph	
Total Ramp Density, TRD		ramps/mi	FFS	65.0	
FFS (measured)	65.0	mph		mph	
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV})$	794	pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV})$	pc/h/ln	
S	65.0	mph	S	mph	
$D = v_p / S$	12.2	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	B		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel <i>US 50 EB</i>		
Agency or Company	KDA		From/To <i>at Red Hawk Parkway</i>		
Date Performed	5/18/2020		Jurisdiction <i>C/T</i>		
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year <i>Exist plus Apprvd Projects</i>		
Project Description <i>Shingle Springs Rancheria Expansion</i>					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	1557	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$ 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
			mph		
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S	65.0	mph	v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S	13.9	pc/mi/ln	S		
LOS	B		D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel <i>US 50 WB</i>		
Agency or Company	KDA		From/To <i>at Red Hawk Parkway</i>		
Date Performed	5/18/2020		Jurisdiction <i>C/T</i>		
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year <i>Exist plus Apprvd Projects</i>		
Project Description <i>Shingle Springs Rancheria Expansion</i>					
☒ Oper.(LOS)		☐ Des.(N)		☐ Planning Data	
Flow Inputs					
Volume, V	2639	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		f _{HV} = 1/[1+P _T (E _T -1) + P _R (E _R -1)] 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0	
				mph	
LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)			Design LOS		
S	64.8	mph	v _p = (V or DDHV) / (PHF x N x f _{HV} x f _p)		
D = v _p / S	23.6	pc/mi/ln	S		
LOS	C		D = v _p / S		
			Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _p - Page 11-18		
DDHV - Directional design hour volume			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2077	Heavy Vehicle Adjustment Factor (fHV)	0.893
Peak Hour Factor	0.94	Flow Rate (Vp), pc/h/ln	1237
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.55
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	19.5
Total Ramp Density Adjustment	-	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, In	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1264	Heavy Vehicle Adjustment Factor (fhv)	0.893
Peak Hour Factor	0.94	Flow Rate (Vp), pc/h/ln	753
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (Et)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	11.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1680	Heavy Vehicle Adjustment Factor (fhv)	0.893
Peak Hour Factor	0.94	Flow Rate (Vp), pc/h/ln	1000
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (flw)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	15.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2384	Heavy Vehicle Adjustment Factor (fhv)	0.893
Peak Hour Factor	0.94	Flow Rate (Vp), pc/h/ln	1420
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (flw)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	22.4
Total Ramp Density Adjustment	-	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel <i>US 50 EB</i>		
Agency or Company	KDA		From/To <i>at Red Hawk Parkway</i>		
Date Performed	5/18/2020		Jurisdiction <i>C/T</i>		
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year <i>Cumulative (2040)</i>		
Project Description <i>Shingle Springs Rancheria Expansion</i>					
☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data					
Flow Inputs					
Volume, V	2305	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	%Trucks and Buses, P _T	6	
Peak-Hr Prop. of AADT, K			%RVs, P _R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f _p	1.00		E _R	2.0	
E _T	2.5		f _{HV} = 1/[1+P _T (E _T - 1) + P _R (E _R - 1)] 0.917		
Speed Inputs			Calc Speed Adj and FFS		
Lane Width	ft				
Rt-Side Lat. Clearance	ft				
Number of Lanes, N	2				
Total Ramp Density, TRD	ramps/mi				
FFS (measured)	65.0 mph				
Base free-flow Speed, BFFS	mph		f _{LW}	mph	
			f _{LC}	mph	
			TRD Adjustment	mph	
			FFS	65.0 mph	
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
v _p = (V or DDHV) / (PHF x N x f _{HV})			Design LOS		
1336	pc/h/ln		v _p = (V or DDHV) / (PHF x N x f _{HV})		
x f _p)			pc/h/ln		
S	65.0	mph	S		
D = v _p / S	20.6	pc/mi/ln	D = v _p / S		
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E _R - Exhibits 11-10, 11-12		
V - Hourly volume	D - Density		f _{LW} - Exhibit 11-8		
v _p - Flow rate	FFS - Free-flow speed		E _T - Exhibits 11-10, 11-11, 11-13		
LOS - Level of service	BFFS - Base free-flow speed		f _{LC} - Exhibit 11-9		
DDHV - Directional design hour volume			f _p - Page 11-18		
			TRD - Page 11-11		
			LOS, S, FFS, v _p - Exhibits 11-2, 11-3		

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel US 50 WB		
Agency or Company	KDA		From/To at Red Hawk Parkway		
Date Performed	5/18/2020		Jurisdiction C/T		
Analysis Time Period	PM Hour 18:00 - 19:00		Analysis Year Cumulative (2040)		
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	1480	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	% Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			% RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade %	Length	mi
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1/[1+P_T(E_T-1)+P_R(E_R-1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft	f_{LW}	mph	
Rt-Side Lat. Clearance		ft	f_{LC}	mph	
Number of Lanes, N	2		TRD Adjustment	mph	
Total Ramp Density, TRD		ramps/mi	FFS	65.0	mph
FFS (measured)	65.0	mph			
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	858	pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	pc/h/ln	
S	65.0	mph	S	mph	
$D = v_p / S$	13.2	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	B		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel	US 50 EB	
Agency or Company	KDA		From/To	at Red Hawk Parkway	
Date Performed	5/18/2020		Jurisdiction	C/T	
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year	Cumulative (2040)	
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	2151	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	% Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			% RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1 / [1 + P_T(E_T - 1) + P_R(E_R - 1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft	f_{LW}	mph	
Rt-Side Lat. Clearance		ft	f_{LC}	mph	
Number of Lanes, N	2		TRD Adjustment	mph	
Total Ramp Density, TRD		ramps/mi	FFS	65.0 mph	
FFS (measured)	65.0	mph			
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1247	pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	pc/h/ln	
S	65.0	mph	S	mph	
$D = v_p / S$	19.2	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

BASIC FREEWAY SEGMENTS WORKSHEET					
General Information			Site Information		
Analyst	JF		Highway/Direction of Travel	US 50 WB	
Agency or Company	KDA		From/To	at Red Hawk Parkway	
Date Performed	5/18/2020		Jurisdiction	C/T	
Analysis Time Period	Saturday Hour 17:00 - 18:00		Analysis Year	Cumulative (2040)	
Project Description Shingle Springs Rancheria Expansion					
☒ Oper. (LOS)		☐ Des. (N)		☐ Planning Data	
Flow Inputs					
Volume, V	2833	veh/h	Peak-Hour Factor, PHF	0.94	
AADT		veh/day	% Trucks and Buses, P_T	6	
Peak-Hr Prop. of AADT, K			% RVs, P_R	0	
Peak-Hr Direction Prop, D			General Terrain:	Rolling	
DDHV = AADT x K x D		veh/h	Grade % Length	mi	
			Up/Down %		
Calculate Flow Adjustments					
f_p	1.00		E_R	2.0	
E_T	2.5		$f_{HV} = 1 / [1 + P_T(E_T - 1) + P_R(E_R - 1)]$	0.917	
Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft	f_{LW}	mph	
Rt-Side Lat. Clearance		ft	f_{LC}	mph	
Number of Lanes, N	2		TRD Adjustment	mph	
Total Ramp Density, TRD		ramps/mi	FFS	65.0	mph
FFS (measured)	65.0	mph			
Base free-flow Speed, BFFS		mph			
LOS and Performance Measures			Design (N)		
<u>Operational (LOS)</u>			<u>Design (N)</u>		
$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	1643	pc/h/ln	$v_p = (V \text{ or } DDHV) / (PHF \times N \times f_{HV} \times f_p)$	pc/h/ln	
S	64.2	mph	S	mph	
$D = v_p / S$	25.6	pc/mi/ln	$D = v_p / S$	pc/mi/ln	
LOS	C		Required Number of Lanes, N		
Glossary			Factor Location		
N - Number of lanes	S - Speed		E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8	
V - Hourly volume	D - Density		E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9	
v_p - Flow rate	FFS - Free-flow speed		f_p - Page 11-18	TRD - Page 11-11	
LOS - Level of service	BFFS - Base free-flow speed		LOS, S, FFS, v_p - Exhibits 11-2, 11-3		
DDHV - Directional design hour volume					

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2471	Heavy Vehicle Adjustment Factor (fHV)	0.893
Peak Hour Factor	0.94	Flow Rate (Vp), pc/h/ln	1472
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (Et)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	23.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, In	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1362	Heavy Vehicle Adjustment Factor (fHV)	0.893
Peak Hour Factor	0.94	Flow Rate (V _p), pc/h/ln	812
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	12.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2274	Heavy Vehicle Adjustment Factor (fHV)	0.893
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1354
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.60
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.4
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	21.4
Total Ramp Density Adjustment	-	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

HCS7 Basic Freeway Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Rolling
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.968
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2569	Heavy Vehicle Adjustment Factor (fHV)	0.893
Peak Hour Factor	0.94	Flow Rate (V _p), pc/h/ln	1530
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2334
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2259
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.68
Passenger Car Equivalent (ET)	3.00		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	24.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFSadj), mi/h	63.4		

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50 WB			
Agency or Company		KDA		Junction		Red Hawk Parkway Off-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		PM 18:00-19:00 Hour		Analysis Year		Existing			
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☒ Yes ☒ On		Ramp Number of Lanes, N				1		☐ Yes ☐ On	
☐ No ☐ Off		Acceleration Lane Length, L_A						☒ No ☐ Off	
$L_{up} =$ 6000 ft		Deceleration Lane Length L_D				350		$L_{down} =$ ft	
$V_u =$ 100 veh/h		Freeway Volume, V_F				1215		$V_D =$ veh/h	
		Ramp Volume, V_R				74			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				25.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1215	0.94	Rolling	6	0	0.917	1.00	1409	
Ramp	74	0.94	Rolling	1	0	0.985	1.00	80	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
(Equation 13-6 or 13-7)					(Equation 13-12 or 13-13)				
$P_{FM} =$ using Equation (Exhibit 13-6)					$P_{FD} =$ 1.000 using Equation (Exhibit 13-7)				
$V_{12} =$ pc/h					$V_{12} =$ 1409 pc/h				
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8			V_F	1409	Exhibit 13-8	4700	No
					$V_{FO} = V_F - V_R$	1329	Exhibit 13-8	4700	No
					V_R	80	Exhibit 13-10	1900	No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8			V_{12}	1409	Exhibit 13-8	4400:All	No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ (pc/mi/ln)					$D_R =$ 13.2 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = B (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ (Exhibit 13-11)					$D_s =$ 0.565 (Exhibit 13-12)				
$S_R =$ mph (Exhibit 13-11)					$S_R =$ 52.0 mph (Exhibit 13-12)				
$S_0 =$ mph (Exhibit 13-11)					$S_0 =$ N/A mph (Exhibit 13-12)				
$S =$ mph (Exhibit 13-13)					$S =$ 52.0 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF		Freeway/Dir of Travel	US 50					
Agency or Company	KDA		Junction	Red Hawk Parkway WB On-Ramp					
Date Performed	5/18/2020		Jurisdiction	C/T					
Analysis Time Period	PM 18:00-19:00 Hour		Analysis Year	Existing					
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N		2		Downstream Adj Ramp			
☐ Yes ☐ On		Ramp Number of Lanes, N		1		☒ Yes ☐ On			
☒ No ☐ Off		Acceleration Lane Length, L_A		500		☐ No ☒ Off			
$L_{up} =$ ft		Deceleration Lane Length L_D				$L_{down} =$ 2300 ft			
$V_{u1} =$ veh/h		Freeway Volume, V_F		1141		$V_D =$ 100 veh/h			
		Ramp Volume, V_R		209					
		Freeway Free-Flow Speed, S_{FF}		65.0					
		Ramp Free-Flow Speed, S_{FR}		55.0					
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1141	0.94	Rolling	5	0	0.930	1.00	1305	
Ramp	209	0.94	Rolling	1	0	0.985	1.00	226	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$P_{FM} =$ (Equation 13-6 or 13-7)					$P_{FD} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1305 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1531	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1531	Exhibit 13-8		No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 14.2 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.284 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 58.5 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_O =$ N/A mph (Exhibit 13-11)					$S_O =$ mph (Exhibit 13-12)				
$S =$ 58.5 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway EB On-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		PM 18:00-19:00 Hour		Analysis Year		Existing			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				370		☐ No ☒ Off	
		Deceleration Lane Length L_D							
$L_{up} =$ ft		Freeway Volume, V_F				1604		$L_{down} =$ 3800 ft	
$V_u =$ veh/h		Ramp Volume, V_R				75		$V_D =$ 100 veh/h	
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1604	0.94	Rolling	5	0	0.930	1.00	1834	
Ramp	75	0.94	Rolling	1	0	0.985	1.00	81	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
(Equation 13-6 or 13-7)					(Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1834 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1915	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1915	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 18.1 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.307 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 57.9 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.9 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

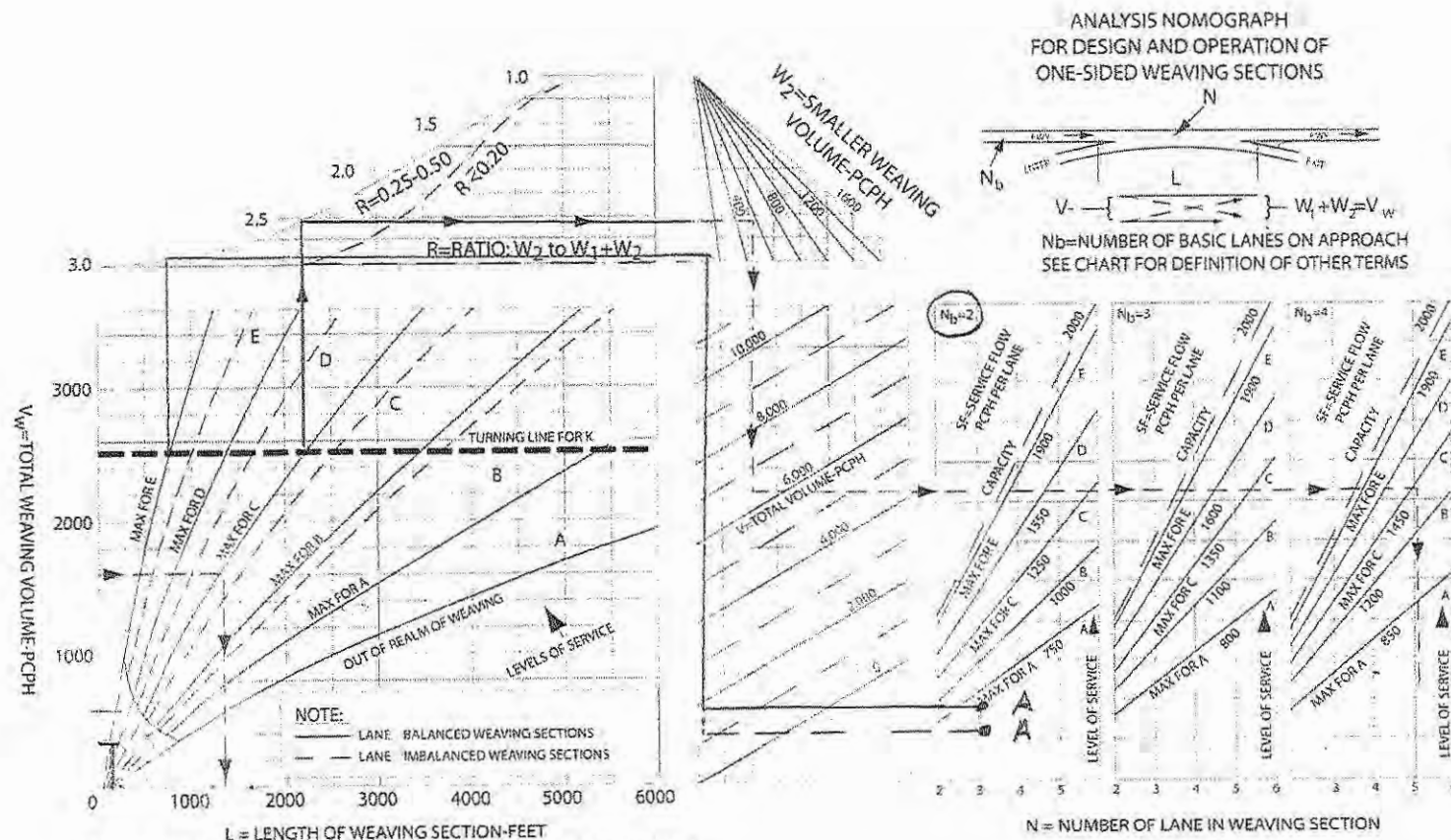


Figure 504.7A
Design Curve for Freeway and Collector Weaving

	V_w	W_2	$V_w \text{ MAX}$	R	V	
EXIST PM	380	100	1500	0.28	1984	---
EXIST SAT	595	100	1500	0.17	1618	---

NOTE: SHINGLE SPRINGS
EB ON-RAMP
VOLUME ASSUMED 100 VPH

EB OFF Q
RED HAWK PRWY
EXISTING

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50 WB			
Agency or Company		KDA		Junction		Red Hawk Parkway Off-Ramp			
Date Performed		5/1/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Existing			
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☒ Yes ☒ On		Ramp Number of Lanes, N				1		☐ Yes ☐ On	
☐ No ☐ Off		Acceleration Lane Length, L_A						☒ No ☐ Off	
$L_{up} =$ 6000 ft		Deceleration Lane Length L_D				350		$L_{down} =$ ft	
$V_u =$ 100 veh/h		Freeway Volume, V_F				2343		$V_D =$ veh/h	
		Ramp Volume, V_R				132			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				25.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2343	0.94	Rolling	6	0	0.917	1.00	2717	
Ramp	132	0.94	Rolling	1	0	0.985	1.00	143	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$L_{EQ} =$ (Equation 13-6 or 13-7)					$L_{EQ} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ using Equation (Exhibit 13-6)					$P_{FD} =$ 1.000 using Equation (Exhibit 13-7)				
$V_{12} =$ pc/h					$V_{12} =$ 2717 pc/h				
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8			V_F	2717	Exhibit 13-8	4700	No
					$V_{FO} = V_F - V_R$	2574	Exhibit 13-8	4700	No
					V_R	143	Exhibit 13-10	1900	No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8			V_{12}	2717	Exhibit 13-8	4400/All	No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ (pc/mi/ln)					$D_R =$ 24.5 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ (Exhibit 13-11)					$D_s =$ 0.571 (Exhibit 13-12)				
$S_R =$ mph (Exhibit 13-11)					$S_R =$ 51.9 mph (Exhibit 13-12)				
$S_0 =$ mph (Exhibit 13-11)					$S_0 =$ N/A mph (Exhibit 13-12)				
$S =$ mph (Exhibit 13-13)					$S =$ 51.9 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway WB On-Ramp			
Date Performed		5/1/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Existing			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				500		☐ No ☒ Off	
$L_{up} =$ ft		Deceleration Lane Length L_D						$L_{down} =$ 2300 ft	
$V_u =$ veh/h		Freeway Volume, V_F				2211		$V_D =$ 100 veh/h	
		Ramp Volume, V_R				397			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2211	0.94	Rolling	5	0	0.930	1.00	2529	
Ramp	397	0.94	Rolling	1	0	0.985	1.00	429	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$P_{FM} =$ (Equation 13-6 or 13-7)					$P_{FD} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 2529 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	2958	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	2958	Exhibit 13-8		No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 25.2 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = C (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.341 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 57.2 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.2 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway EB On-Ramp			
Date Performed		5/1/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Existing			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				370		☐ No ☒ Off	
$L_{up} =$ ft		Deceleration Lane Length L_D						$L_{down} =$ 3800 ft	
$V_u =$ veh/h		Freeway Volume, V_F				1023		$V_D =$ 100 veh/h	
		Ramp Volume, V_R				85			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1023	0.94	Rolling	5	0	0.930	1.00	1170	
Ramp	85	0.94	Rolling	1	0	0.985	1.00	92	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1170 pc/h					$V_{12} =$ pc/h				
V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1262	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1262	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 13.0 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.294 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 58.2 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 58.2 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

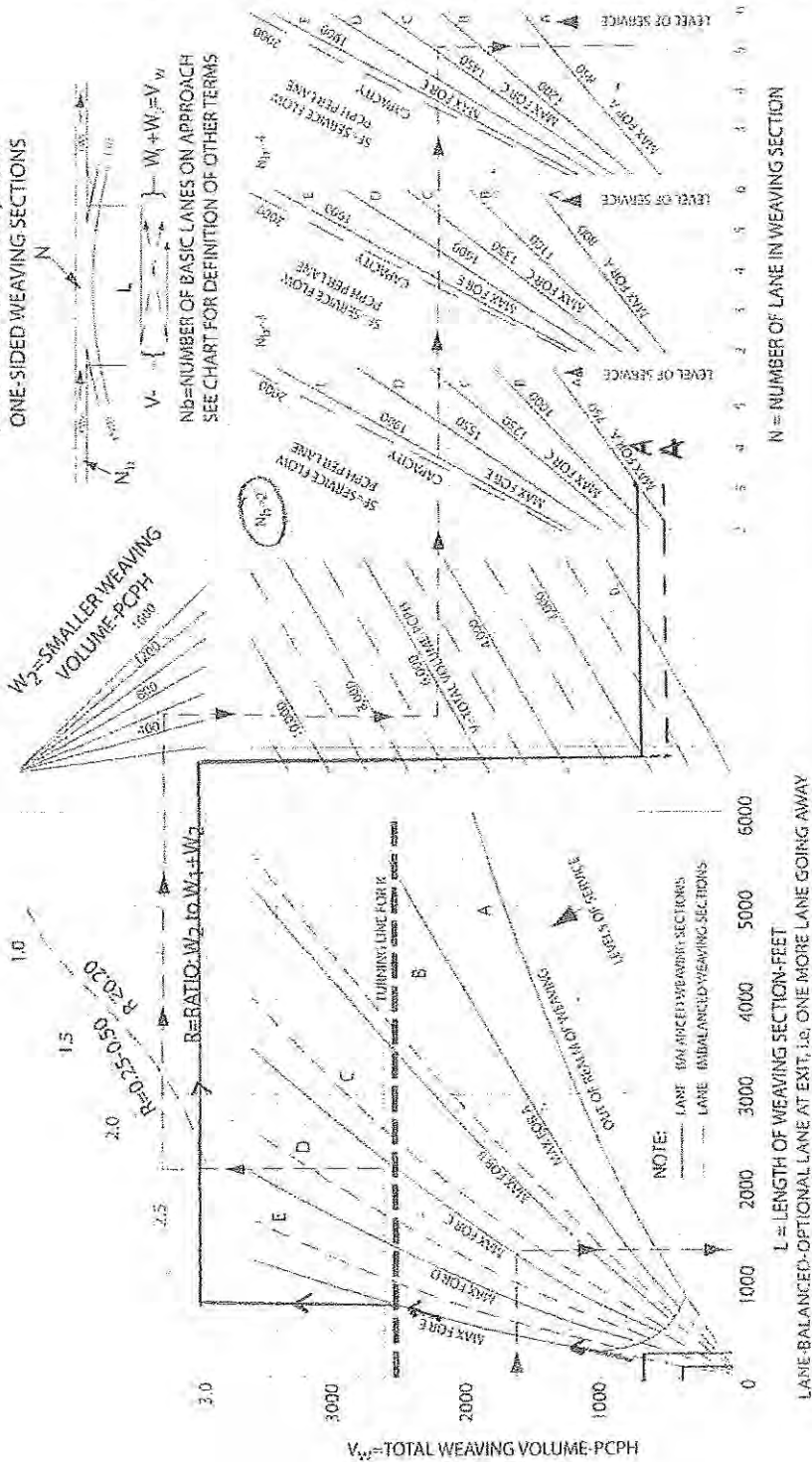
RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50 WB			
Agency or Company		KDA		Junction		Red Hawk Parkway Off-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		PM 18:00-19:00 Hour		Analysis Year		Existing + Apprvd Projects			
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp ☒ Yes ☒ On ☐ No ☐ Off L _{up} = 6000 ft V _u = 100 veh/h		Freeway Number of Lanes, N 2				Downstream Adj Ramp ☐ Yes ☐ On ☒ No ☐ Off L _{down} = ft V _D = veh/h			
		Ramp Number of Lanes, N 1							
		Acceleration Lane Length, L _A							
		Deceleration Lane Length L _D 350							
		Freeway Volume, V _F 1222							
		Ramp Volume, V _R 81							
		Freeway Free-Flow Speed, S _{FF} 65.0							
		Ramp Free-Flow Speed, S _{FR} 25.0							
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f _{HV}	f _p	v = V/PHF x f _{HV} x f _p	
Freeway	1222	0.94	Rolling	6	0	0.917	1.00	1417	
Ramp	81	0.94	Rolling	1	0	0.985	1.00	87	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Merge Areas					Diverge Areas				
Estimation of v₁₂					Estimation of v₁₂				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) P _{FM} = using Equation (Exhibit 13-6) V ₁₂ = pc/h V ₃ or V _{av34} = pc/h (Equation 13-14 or 13-17) Is V ₃ or V _{av34} > 2,700 pc/h? ☐ Yes ☐ No Is V ₃ or V _{av34} > 1.5 * V ₁₂ /2 ☐ Yes ☐ No If Yes, V _{12a} = pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) P _{FD} = 1.000 using Equation (Exhibit 13-7) V ₁₂ = 1417 pc/h V ₃ or V _{av34} = 0 pc/h (Equation 13-14 or 13-17) Is V ₃ or V _{av34} > 2,700 pc/h? ☐ Yes ☒ No Is V ₃ or V _{av34} > 1.5 * V ₁₂ /2 ☐ Yes ☒ No If Yes, V _{12a} = pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V _{FO}		Exhibit 13-8			V _F	1417	Exhibit 13-8	4700	No
					V _{FO} = V _F - V _R	1330	Exhibit 13-8	4700	No
					V _R	87	Exhibit 13-10	1900	No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V _{R12}		Exhibit 13-8			V ₁₂	1417	Exhibit 13-8	4400:All	No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$ D _R = (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ D _R = 13.3 (pc/mi/ln) LOS = B (Exhibit 13-2)				
Speed Determination					Speed Determination				
M _S = (Exhibit 13-11) S _R = mph (Exhibit 13-11) S ₀ = mph (Exhibit 13-11) S = mph (Exhibit 13-13)					D _s = 0.586 (Exhibit 13-12) S _R = 52.0 mph (Exhibit 13-12) S ₀ = N/A mph (Exhibit 13-12) S = 52.0 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF	Freeway/Dir of Travel	US 50						
Agency or Company	KDA	Junction	Red Hawk Parkway WB On-Ramp						
Date Performed	5/18/2020	Jurisdiction	C/T						
Analysis Time Period	PM 18:00-19:00 Hour	Analysis Year	Exist + Apprvd Projects						
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N		2		Downstream Adj Ramp			
☐ Yes ☐ On		Ramp Number of Lanes, N		1		☒ Yes ☐ On			
☒ No ☐ Off		Acceleration Lane Length, L_A		500		☐ No ☒ Off			
$L_{up} =$ ft		Deceleration Lane Length L_D				$L_{down} =$ 2300 ft			
$V_u =$ veh/h		Freeway Volume, V_F		1141		$V_D =$ 100 veh/h			
		Ramp Volume, V_R		228					
		Freeway Free-Flow Speed, S_{FF}		65.0					
		Ramp Free-Flow Speed, S_{FR}		55.0					
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1141	0.94	Rolling	5	0	0.930	1.00	1305	
Ramp	228	0.94	Rolling	1	0	0.985	1.00	246	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$P_{EQ} =$ (Equation 13-6 or 13-7)					$P_{EQ} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1305 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1551	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1551	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 14.3 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.284 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 58.5 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 58.5 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway EB On-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		PM 18:00-19:00 Hour		Analysis Year		Exist plus Apprvd Projects			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				370		☐ No ☒ Off	
$L_{up} =$ ft		Deceleration Lane Length L_D						$L_{down} =$ 3800 ft	
$V_u =$ veh/h		Freeway Volume, V_F				1604		$V_D =$ 100 veh/h	
		Ramp Volume, V_R				80			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1604	0.94	Rolling	5	0	0.930	1.00	1834	
Ramp	80	0.94	Rolling	1	0	0.985	1.00	86	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$L_{EQ} =$ (Equation 13-6 or 13-7)					$L_{EQ} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1834 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1920	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1920	Exhibit 13-8		No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 18.1 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.307 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 57.9 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.9 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

Figure 504.7A
Design Curve for Freeway and Collector Weaving

ANALYSIS NOMOGRAPH
FOR DESIGN AND OPERATION OF
ONE-SIDED WEAVING SECTIONS



NOTE - SINGLE SPRINGS
50 00-RAMP ASSUMED
100 VPM

EB OFF RAMP @
R150 HAWK PRELIM

EXIST + APPROVED PROJECTS

V_w	W_2	V
407	100	2011
634	100	1657

EPAP PM ---
EPAP SAT ---

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50 WB			
Agency or Company		KDA		Junction		Red Hawk Parkway Off-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Exist plus Apprvd Projects			
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp ☒ Yes ☒ On ☐ No ☐ Off $L_{up} =$ 6000 ft $V_u =$ 100 veh/h		Freeway Number of Lanes, N		2		Downstream Adj Ramp ☐ Yes ☐ On ☒ No ☐ Off $L_{down} =$ ft $V_D =$ veh/h			
		Ramp Number of Lanes, N		1					
		Acceleration Lane Length, L_A							
		Deceleration Lane Length L_D		350					
		Freeway Volume, V_F		2353					
		Ramp Volume, V_R		142					
		Freeway Free-Flow Speed, S_{FF}		65.0					
		Ramp Free-Flow Speed, S_{FR}		25.0					
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2353	0.94	Rolling	6	0	0.917	1.00	2728	
Ramp	142	0.94	Rolling	1	0	0.985	1.00	153	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7) $P_{FM} =$ using Equation (Exhibit 13-6) $V_{12} =$ pc/h V_3 or V_{av34} pc/h (Equation 13-14 or 13-17) Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13) $P_{FD} =$ 1.000 using Equation (Exhibit 13-7) $V_{12} =$ 2728 pc/h V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17) Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8			V_F	2728	Exhibit 13-8	4700	No
					$V_{FO} = V_F - V_R$	2575	Exhibit 13-8	4700	No
					V_R	153	Exhibit 13-10	1900	No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8			V_{12}	2728	Exhibit 13-8	4400:All	No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$ $D_R =$ (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ $D_R =$ 24.6 (pc/mi/ln) LOS = C (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ (Exhibit 13-11) $S_R =$ mph (Exhibit 13-11) $S_0 =$ mph (Exhibit 13-11) $S =$ mph (Exhibit 13-13)					$D_s =$ 0.572 (Exhibit 13-12) $S_R =$ 51.8 mph (Exhibit 13-12) $S_0 =$ N/A mph (Exhibit 13-12) $S =$ 51.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway WB On-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Exist plus Apprvd Projects			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				500		☐ No ☒ Off	
$L_{up} =$ ft		Deceleration Lane Length L_D						$L_{down} =$ 2300 ft	
$V_u =$ veh/h		Freeway Volume, V_F				2211		$V_D =$ 100 veh/h	
		Ramp Volume, V_R				428			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2211	0.94	Rolling	5	0	0.930	1.00	2529	
Ramp	428	0.94	Rolling	1	0	0.985	1.00	462	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$L_{EQ} =$ (Equation 13-6 or 13-7)					$L_{EQ} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 2529 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks									
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	2991	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	2991	Exhibit 13-8		No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 25.5 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = C (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.344 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 57.1 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.1 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF		Freeway/Dir of Travel	US 50					
Agency or Company	KDA		Junction	Red Hawk Parkway EB On-Ramp					
Date Performed	5/18/2020		Jurisdiction	C/T					
Analysis Time Period	Saturday 17:00-18:00 Hour		Analysis Year	Existing + Apprvd Projects					
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N		2		Downstream Adj Ramp			
☐ Yes ☐ On		Ramp Number of Lanes, N		1		☒ Yes ☐ On			
☒ No ☐ Off		Acceleration Lane Length, L_A		370		☐ No ☒ Off			
$L_{up} =$ ft		Deceleration Lane Length L_D				$L_{down} =$ 3800 ft			
$V_u =$ veh/h		Freeway Volume, V_F		1023		$V_D =$ 100 veh/h			
		Ramp Volume, V_R		93					
		Freeway Free-Flow Speed, S_{FF}		65.0					
		Ramp Free-Flow Speed, S_{FR}		55.0					
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1023	0.94	Rolling	5	0	0.930	1.00	1170	
Ramp	93	0.94	Rolling	1	0	0.985	1.00	100	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1170 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1270	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1270	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 13.0 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.294 (Exhibit 13-11)					$D_s =$ (Exhibit 13-12)				
$S_R =$ 58.2 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 58.2 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

HCS7 Freeway Diverge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	350
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1264	123
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.980
Flow Rate (vi),pc/h	1506	134
Capacity (c), pc/h	4453	1839
Volume-to-Capacity Ratio (v/c)	0.34	0.07

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (No)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.578
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	51.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	69.5
Flow in Lanes 1 and 2 (v12), pc/h	1506	Ramp Junction Speed (S), mi/h	51.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	14.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.1

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	500
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1141	337
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	1335	366
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.38	0.17

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.289
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	1335	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	1701	Average Density (D), pc/mi/ln	14.9
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	15.5

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	370
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1604	107
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	1877	116
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.45	0.05

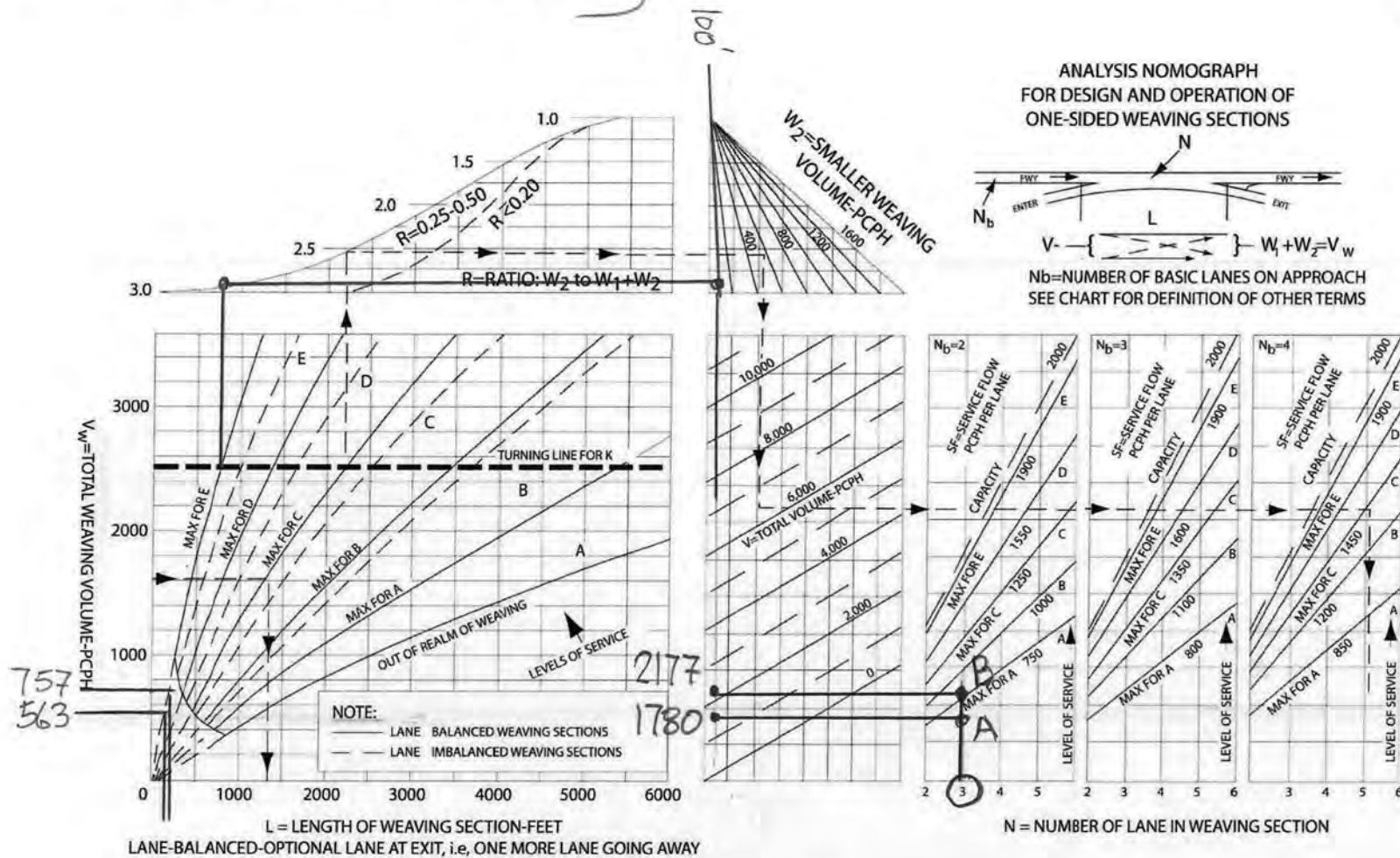
Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (No)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.310
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	56.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	1877	Ramp Junction Speed (S), mi/h	56.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	1993	Average Density (D), pc/mi/ln	17.5
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	18.7

Figure 504.7A

Design Curve for Freeway and Collector Weaving

Existing + Approved Project + Project (EPAP + Project)
EB Off-Ramp e Red Hawk Parkway



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, $W_1 + W_2$ (or V_w) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance $L = 1300$ ft. Returning to first intersection point of V_w with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K:" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V , from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to $N = 5$ lanes.

EPAP + Project Fri PM	$\frac{V_w}{563}$	$\frac{W_2}{100}$	$\frac{V}{2177} \rightarrow$ LOS B
EPAP + Project Sat PM	$\frac{V_w}{757}$	$\frac{W_2}{100}$	$\frac{V}{1780} \rightarrow$ LOS A

HCS7 Freeway Diverge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	350
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2384	173
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.980
Flow Rate (vi),pc/h	2840	188
Capacity (c), pc/h	4453	1839
Volume-to-Capacity Ratio (v/c)	0.64	0.10

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.583
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	69.5
Flow in Lanes 1 and 2 (v12), pc/h	2840	Ramp Junction Speed (S), mi/h	50.9
Flow Entering Ramp-Infl. Area (VR12), pc/h	-	Average Density (D), pc/mi/ln	27.9
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.5

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	500
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2211	548
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	2588	595
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.71	0.28

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.361
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	55.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	2588	Ramp Junction Speed (S), mi/h	55.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	3183	Average Density (D), pc/mi/ln	28.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.0

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	EPAP + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA), ft	1500	370
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1023	123
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi), pc/h	1197	134
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.30	0.06

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.296
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	1197	Ramp Junction Speed (S), mi/h	57.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1331	Average Density (D), pc/mi/ln	11.7
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	13.5

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50 WB			
Agency or Company		KDA		Junction		Red Hawk Parkway Off-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		PM 18:00-19:00 Hour		Analysis Year		Cumulative 2040			
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☒ Yes ☒ On		Ramp Number of Lanes, N				1		☐ Yes ☐ On	
☐ No ☐ Off		Acceleration Lane Length, L_A						☒ No ☐ Off	
$L_{up} =$ 6000 ft		Deceleration Lane Length L_D				350		$L_{down} =$ ft	
$V_{it} =$ 100 veh/h		Freeway Volume, V_F				1320		$V_D =$ veh/h	
		Ramp Volume, V_R				90			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				25.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1320	0.94	Rolling	6	0	0.917	1.00	1531	
Ramp	90	0.94	Rolling	1	0	0.985	1.00	97	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$ $L_{EQ} =$ (Equation 13-6 or 13-7) $P_{FM} =$ using Equation (Exhibit 13-6) $V_{12} =$ pc/h V_3 or V_{av34} pc/h (Equation 13-14 or 13-17) Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ $L_{EQ} =$ (Equation 13-12 or 13-13) $P_{FD} =$ 1.000 using Equation (Exhibit 13-7) $V_{12} =$ 1531 pc/h V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17) Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8			V_F	1531	Exhibit 13-8	4700	No
					$V_{FO} = V_F - V_R$	1434	Exhibit 13-8	4700	No
					V_R	97	Exhibit 13-10	1900	No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8			V_{12}	1531	Exhibit 13-8	4400:All	No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$ $D_R =$ (pc/mi/ln) LOS = (Exhibit 13-2)					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$ $D_R =$ 14.3 (pc/mi/ln) LOS = B (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ (Exhibit 13-11) $S_R =$ mph (Exhibit 13-11) $S_0 =$ mph (Exhibit 13-11) $S =$ mph (Exhibit 13-13)					$D_s =$ 0.567 (Exhibit 13-12) $S_R =$ 52.0 mph (Exhibit 13-12) $S_0 =$ N/A mph (Exhibit 13-12) $S =$ 52.0 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF		Freeway/Dir of Travel	US 50					
Agency or Company	KDA		Junction	Red Hawk Parkway WB On-Ramp					
Date Performed	5/18/2020		Jurisdiction	C/T					
Analysis Time Period	PM 18:00-19:00 Hour		Analysis Year	Cumulative 2040					
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				500		☐ No ☒ Off	
		Deceleration Lane Length L_D							
$t_{up} =$ ft		Freeway Volume, V_F				1230		$t_{down} =$ 2300 ft	
$V_u =$ veh/h		Ramp Volume, V_R				250		$V_D =$ 100 veh/h	
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1230	0.94	Rolling	5	0	0.930	1.00	1407	
Ramp	250	0.94	Rolling	1	0	0.985	1.00	270	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
(Equation 13-6 or 13-7)					(Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1407 pc/h					$V_{12} =$ pc/h				
V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1677	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1677	Exhibit 13-8	4600: AII	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 15.3 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.287 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 58.4 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 58.4 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF		Freeway/Dir of Travel	US 50					
Agency or Company	KDA		Junction	Red Hawk Parkway EB On-Ramp					
Date Performed	5/18/2020		Jurisdiction	C/T					
Analysis Time Period	PM 18:00-19:00 Hour		Analysis Year	Cumulative 2040					
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp	Freeway Number of Lanes, N		2		Downstream Adj Ramp				
☐ Yes ☐ On	Ramp Number of Lanes, N		1		☒ Yes ☐ On				
☒ No ☐ Off	Acceleration Lane Length, L_A		370		☐ No ☒ Off				
$L_{up} =$ ft	Deceleration Lane Length L_D				$L_{down} =$ 3800 ft				
$V_u =$ veh/h	Freeway Volume, V_F		1975		$V_D =$ 100 veh/h				
	Ramp Volume, V_R		85						
	Freeway Free-Flow Speed, S_{FF}		65.0						
	Ramp Free-Flow Speed, S_{FR}		55.0						
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1975	0.94	Rolling	5	0	0.930	1.00	2259	
Ramp	85	0.94	Rolling	1	0	0.985	1.00	92	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$L_{EQ} =$ (Equation 13-6 or 13-7)					$L_{EQ} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 2259 pc/h					$V_{12} =$ pc/h				
V_3 or $V_{av34} =$ 0 pc/h (Equation 13-14 or 13-17)					V_3 or $V_{av34} =$ pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	2351	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	2351	Exhibit 13-8		No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 21.5 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = C (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.321 (Exhibit 13-11)					$D_s =$ (Exhibit 13-12)				
$S_R =$ 57.6 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.6 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

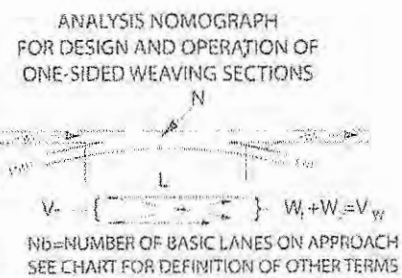


Figure 504.7A
Design Curve for Treelay and Collector Weaving

Example: The isomograph is entered on the left past dashed line and arrowed with working volume, W_1/W_2 (or W_1) followed by projection to the right, intersecting the desired working LOS; a vertical drop from this point provides working distance $L = 1.395$ ft. Returning to first intersection point of W_1 with LOS line, an upward projection along the LOS line is intersected with the horizontal heavy dashed "turning line" for K' from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V , from which the line is horizontally projected to the right, intersection in this case the desired LOS = C , curve having an SF of 14.58 representing the overall or composite operation of the working system, from which a downward extension yields a N of 5.2; this would be rounded to $N = 5$ turns.

NOTE - SINGLE SPRINGS
EB 00-RAMP ASSUMED
100 VPM

		V_w	W_z	V
CUMULATIVE	PM —	430	100	2075
CUMULATIVE	SAT ---	660	100	1691

EB OFF-RAMP @
RED HAWK PKWY
CUMULATIVE (2040)

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst	JF		Freeway/Dir of Travel	US 50 WB					
Agency or Company	KDA		Junction	Red Hawk Parkway Off-Ramp					
Date Performed	5/18/2020		Jurisdiction	C/T					
Analysis Time Period	Saturday 17:00-18:00 Hour		Analysis Year	Cumulative 2040					
Project Description Shingle Springs Rancheria Expansion									
Inputs									
Upstream Adj Ramp	Freeway Number of Lanes, N		2		Downstream Adj Ramp				
☒ Yes ☒ On	Ramp Number of Lanes, N		1		☐ Yes ☐ On				
☐ No ☐ Off	Acceleration Lane Length, L_A				☒ No ☐ Off				
$L_{up} =$ 6000 ft	Deceleration Lane Length L_D		350		$L_{down} =$ ft				
$V_u =$ 100 veh/h	Freeway Volume, V_F		2538		$V_D =$ veh/h				
	Ramp Volume, V_R		155						
	Freeway Free-Flow Speed, S_{FF}		65.0						
	Ramp Free-Flow Speed, S_{FR}		25.0						
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2538	0.94	Rolling	6	0	0.917	1.00	2943	
Ramp	155	0.94	Rolling	1	0	0.985	1.00	167	
UpStream	100	0.94	Rolling	1	0	0.985	1.00	108	
DownStream									
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
(Equation 13-6 or 13-7)					(Equation 13-12 or 13-13)				
$P_{FM} =$ using Equation (Exhibit 13-6)					$P_{FD} =$ 1.000 using Equation (Exhibit 13-7)				
$V_{12} =$ pc/h					$V_{12} =$ 2943 pc/h				
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No				
Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☐ No					Is V_3 or $V_{av34} > 1.5 * V_{12}/2$ ☐ Yes ☒ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8			V_F	2943	Exhibit 13-8		4700 No
					$V_{FO} = V_F - V_R$	2776	Exhibit 13-8		4700 No
					V_R	167	Exhibit 13-10		1900 No
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8			V_{12}	2943	Exhibit 13-8		4400:All No
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ (pc/mi/ln)					$D_R =$ 26.4 (pc/mi/ln)				
LOS = (Exhibit 13-2)					LOS = C (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ (Exhibit 13-11)					$D_S =$ 0.573 (Exhibit 13-12)				
$S_R =$ mph (Exhibit 13-11)					$S_R =$ 51.8 mph (Exhibit 13-12)				
$S_0 =$ mph (Exhibit 13-11)					$S_0 =$ N/A mph (Exhibit 13-12)				
$S =$ mph (Exhibit 13-13)					$S =$ 51.8 mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway WB On-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Cumulative 2040			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				500		☐ No ☒ Off	
$L_{up} =$ ft		Deceleration Lane Length L_D						$L_{down} =$ 2300 ft	
$V_u =$ veh/h		Freeway Volume, V_F				2383		$V_D =$ 100 veh/h	
		Ramp Volume, V_R				450			
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	2383	0.94	Rolling	5	0	0.930	1.00	2725	
Ramp	450	0.94	Rolling	1	0	0.985	1.00	486	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$					$V_{12} = V_R + (V_F - V_R)P_{FD}$				
$P_{FM} =$ (Equation 13-6 or 13-7)					$P_{FD} =$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 2725 pc/h					$V_{12} =$ pc/h				
V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	3211	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	3211	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 27.2 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = C (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.363 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 56.7 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 56.7 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

RAMPS AND RAMP JUNCTIONS WORKSHEET									
General Information					Site Information				
Analyst		JF		Freeway/Dir of Travel		US 50			
Agency or Company		KDA		Junction		Red Hawk Parkway EB On-Ramp			
Date Performed		5/18/2020		Jurisdiction		C/T			
Analysis Time Period		Saturday 17:00-18:00 Hour		Analysis Year		Cumulative 2040			
Project Description Shingle Springs Rancheria									
Inputs									
Upstream Adj Ramp		Freeway Number of Lanes, N				2		Downstream Adj Ramp	
☐ Yes ☐ On		Ramp Number of Lanes, N				1		☒ Yes ☐ On	
☒ No ☐ Off		Acceleration Lane Length, L_A				370		☐ No ☒ Off	
		Deceleration Lane Length L_D							
$L_{up} =$ ft		Freeway Volume, V_F				1591		$L_{down} =$ 3800 ft	
$V_u =$ veh/h		Ramp Volume, V_R				95		$V_D =$ 100 veh/h	
		Freeway Free-Flow Speed, S_{FF}				65.0			
		Ramp Free-Flow Speed, S_{FR}				55.0			
Conversion to pc/h Under Base Conditions									
(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$	
Freeway	1591	0.94	Rolling	5	0	0.930	1.00	1819	
Ramp	95	0.94	Rolling	1	0	0.985	1.00	103	
UpStream									
DownStream	100	0.94	Rolling	1	0	0.985	1.00	108	
Merge Areas					Diverge Areas				
Estimation of v_{12}					Estimation of v_{12}				
$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)					$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)				
$P_{FM} =$ 1.000 using Equation (Exhibit 13-6)					$P_{FD} =$ using Equation (Exhibit 13-7)				
$V_{12} =$ 1819 pc/h					$V_{12} =$ pc/h				
V_3 or V_{av34} 0 pc/h (Equation 13-14 or 13-17)					V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)				
Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☒ No					Is V_3 or $V_{av34} > 2,700$ pc/h? ☐ Yes ☐ No				
Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☒ No					Is V_3 or $V_{av34} > 1.5 \times V_{12}/2$ ☐ Yes ☐ No				
If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)					If Yes, $V_{12a} =$ pc/h (Equation 13-16, 13-18, or 13-19)				
Capacity Checks					Capacity Checks				
	Actual	Capacity		LOS F?		Actual	Capacity		LOS F?
V_{FO}	1922	Exhibit 13-8		No	V_F		Exhibit 13-8		
					$V_{FO} = V_F - V_R$		Exhibit 13-8		
					V_R		Exhibit 13-10		
Flow Entering Merge Influence Area					Flow Entering Diverge Influence Area				
	Actual	Max Desirable		Violation?		Actual	Max Desirable		Violation?
V_{R12}	1922	Exhibit 13-8	4600:All	No	V_{12}		Exhibit 13-8		
Level of Service Determination (if not F)					Level of Service Determination (if not F)				
$D_R = 5.475 + 0.00734 V_R + 0.0078 V_{12} - 0.00627 L_A$					$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$				
$D_R =$ 18.1 (pc/mi/ln)					$D_R =$ (pc/mi/ln)				
LOS = B (Exhibit 13-2)					LOS = (Exhibit 13-2)				
Speed Determination					Speed Determination				
$M_S =$ 0.307 (Exhibit 13-11)					$D_S =$ (Exhibit 13-12)				
$S_R =$ 57.9 mph (Exhibit 13-11)					$S_R =$ mph (Exhibit 13-12)				
$S_0 =$ N/A mph (Exhibit 13-11)					$S_0 =$ mph (Exhibit 13-12)				
$S =$ 57.9 mph (Exhibit 13-13)					$S =$ mph (Exhibit 13-13)				

HCS7 Freeway Diverge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	350
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1362	132
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.980
Flow Rate (vi),pc/h	1623	143
Capacity (c), pc/h	4453	1839
Volume-to-Capacity Ratio (v/c)	0.36	0.08

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (Ds)	0.579
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	51.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	69.5
Flow in Lanes 1 and 2 (v12), pc/h	1623	Ramp Junction Speed (S), mi/h	51.0
Flow Entering Ramp-Infl. Area (VR12), pc/h	-	Average Density (D), pc/mi/ln	15.9
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	15.1

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), In	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	500
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1230	359
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fhv)	0.909	0.980
Flow Rate (vi),pc/h	1440	390
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.41	0.18

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (No)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (Ms)	0.292
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	1440	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	1830	Average Density (D), pc/mi/ln	16.0
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	16.5

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Friday PM Pk Hr (18:00-19:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	370
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

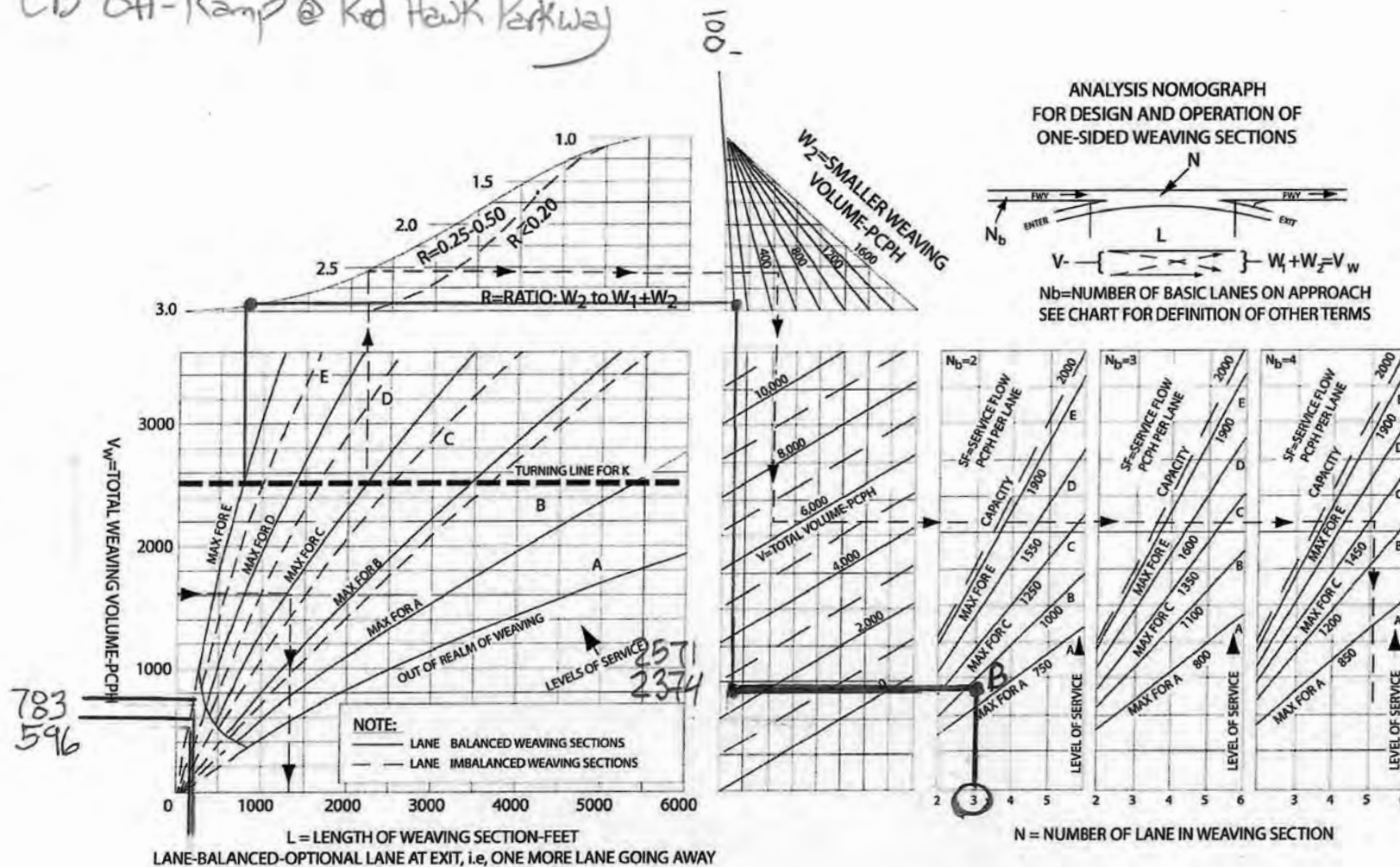
Demand Volume (Vi)	1975	112
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	2311	122
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.55	0.06

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (No)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.326
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	2311	Ramp Junction Speed (S), mi/h	56.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2433	Average Density (D), pc/mi/ln	21.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	22.1

Cumulative (2040) + Project
EB Off-Ramp @ Red Hawk Parkway

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or W_v) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance $L = 1300$ ft. Returning to first intersection point of W_v with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K": from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V , from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to $N = 5$ lanes.

	W_v	W_2	V	
Cumulative + Project Fri PM	596	100	2571	→ LOS B
Cumulative + Project Sat PM	783	100	2374	→ LOS B

HCS7 Freeway Diverge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	25.0
Segment Length (L) / Deceleration Length (LA),ft	1500	350
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2569	186
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	6.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.893	0.980
Flow Rate (vi),pc/h	3060	202
Capacity (c), pc/h	4453	1839
Volume-to-Capacity Ratio (v/c)	0.69	0.11

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.584
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	69.5
Flow in Lanes 1 and 2 (v12), pc/h	3060	Ramp Junction Speed (S), mi/h	50.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	30.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.4

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	500
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2383	570
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	2789	619
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.77	0.29

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (No)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.385
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	2789	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (VR12), pc/h	3408	Average Density (D), pc/mi/ln	30.9
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.7

HCS7 Freeway Merge Report

Project Information

Analyst	LCW	Date	4/27/2021
Agency	LCW	Analysis Year	Cumulative (2040) + Project
Jurisdiction	Caltrans	Time Analyzed	Saturday PM Pk Hr (17:00-18:00)
Project Description	Shingle Springs Rancheria Expansion	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	65.0	55.0
Segment Length (L) / Acceleration Length (LA),ft	1500	370
Terrain Type	Rolling	Rolling
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1591	125
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	5.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.909	0.980
Flow Rate (vi),pc/h	1862	136
Capacity (c), pc/h	4453	2130
Volume-to-Capacity Ratio (v/c)	0.45	0.06

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.310
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	56.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	63.4
Flow in Lanes 1 and 2 (v12), pc/h	1862	Ramp Junction Speed (S), mi/h	56.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	1998	Average Density (D), pc/mi/ln	17.6
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	18.7