Draft
Environmental Impact Report

FEATHER RANCH PROJECT

City of Oroville, California

CEQA Lead Agency:

City of Oroville
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Oroville, California 95965

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EXECUTIVE SUMMARY

ES-1 Introduction

This Draft Environmental Impact Report (DEIR, Draft EIR) evaluates the potential environmental effects of the proposed construction and operation of the Feather Ranch Project (Proposed Project) in the City of Oroville, Butte County, California. The City of Oroville is the Lead Agency responsible for preparation of this DEIR. This DEIR was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA, Public Resources Code [PRC] Section 21000 et. seq.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Sections 15000 et seq). CEQA requires that the Lead Agency, in this case City of Oroville, consider the information contained in the DEIR prior to taking any discretionary action on the Project. The Lead Agency is the agency with primary responsibility for approval of a project. Other public agencies may also use this EIR to inform discretionary actions related to the Proposed Project.

This Summary has been prepared in accordance with the CEQA Guidelines Section 15123, which states that an EIR should contain a brief summary of the Proposed Project and its consequences, and should identify:

1. each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect,
2. areas of public controversy known to the lead agency, including issues raised by the agencies and the public, and
3. issues to be resolved, including the choice among alternatives and how to mitigate the significant effects.

ES-2 Project Location and Setting

The Project is located directly southwest of the Feather Avenue/20th Street intersection in City of Oroville, California. Assessor's Parcel Number (APN) 030-230-098 (Figures 2.0-1 and 2.0-2). The Project is 44.97 acres in size. The Surrounding uses include single-family homes and vacant land to the east of the Project Site. Rural residential uses and vacant land lie to the north of the Project Site; vacant land lies to the west of the Site, with rural residential uses and vacant land to the south. The Oroville Municipal Airport (OMA) is approximately 0.75 mile to the south of the Project Site and the Thermalito Forebay is 0.5 mile to the north (Figure 2.0-3).

As shown in Figure 3, surrounding land uses include a mixture of vacant land, single-family residential neighborhoods, OMA, a school, and light industrial and commercial uses near the Project Site as described below.

North. The Project Site's northern boundary is generally bounded by a dirt access road with vacant land and a scattering of single-family residences fronting 21st Street off Grand Avenue.

East. The Project Site's eastern boundary is generally bounded by 20th Street off Grand Avenue with a single-family residential neighborhood beyond the northern half of the eastern boundary, with vacant land beyond 20th Street on the southern half of the eastern boundary.

South. The Project Site's southern boundary is generally bounded by a dirt access road with vacant land and a scattering of single-family residences fronting 20th Street beyond. CA State Route (SR) 162 is located approximately 1,570 feet from the Project Site's southern boundary where 20th Street intersects. Beyond SR 162 (Oro Dam Boulevard West), and in the northeastern corner and abutting the OMA area, there is an industrial storage yard with commercial uses on either side and the Northwest Lineman College.

West. The Project's western boundary is generally bounded by a dirt access road with vacant land beyond and a scattering of single-family residences fronting Gold Country Lane and Chardonnay Way.

ES-3 Description of Proposed Project

The Proposed Project is the subdivision of a 44.97-acre site into 172 single-family lots located at the southwest corner of the Feather Avenue/20th Street intersection in the City of Oroville, California. Figure 2.0-4 shows the Project Site Plan. Lots will range in size from 6,600 to 9,410 square feet (sf), and the average lot size is 7,450 sf. The subdivision is proposed as a phased map. Phase 1 proposes 68 lots, Phase 2 proposes 58 lots, and Phase 3 proposes 46 lots (Figure 2.0-4). Section 2.0 of this DEIR contains a detailed description of the Proposed Project.

ES-4 Project Objectives

The Feather Ranch Project includes the following objectives that encompass a variety of goals that aim to provide solutions to some of the state and city's housing needs, while also considering the needs of future residents. The Project objectives area as follows:

- Develop an economically feasible housing plan that is compatible with the surrounding community in a low fire risk zone to provide permanent housing relief for the 50,000 displaced Paradise fire survivors.
- Fulfill the housing needs of the state, City of Oroville, and County of Butte by rezoning un-used isolated airport business park land to medium density residential homes to help address the current Regional Housing Needs Assessment (RHNA). The housing units will be market-rate for-sale units.
- Create a vibrant residential community by providing a like-kind residential project that further adds to western Oroville's current and future neighborhoods. The Project will include lots of 6,000 sf or larger, setback and landscaping buffers.
- Provide a well-connected open space network that includes the addition of a neighborhood park, bicycle paths and pedestrian sidewalks, open space buffers, and a space for recreational activities.
- Incorporate the Building Code requirements for energy efficiencies and water savings.

ES-5 Project Alternatives

The CEQA Guidelines Section 15126.6 specifies that an EIR must describe and evaluate a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project. Chapter 5 of this DEIR describes the alternatives to the Proposed Project. These alternatives include:

- Alternative 1: No Project;
- Alternative 2: Reduced Project; and
- Alternative 3: Residential Densities Consistent with the Airport land Use Plan B1 Compatibility Zone.

ES-5.1 Alternative 1: No Project

Under CEQA, an EIR must include a comparative analysis of a No Project Alternative (CEQA Guidelines Section 15126.6(e)). This requirement encourages a lead agency to compare the environmental effects of approving a proposed project with the effects of not approving it. The No Project Alternative generally assumes that the land area affected by Project construction would remain in its existing state, while taking into account what would be reasonably expected to occur in the foreseeable future if the Project were not approved. No other development is proposed in the area or the Project Site. As such, Alternative 1 assumes that the Project Site would remain vacant for the foreseeable future.

ES-5.2 Alternative 2: Reduce Project

Alternative 2 would require a General Plan amendment and rezoning approval similar to the Proposed Project as the proposed uses under Alternative 2 are not allowed under the current General Plan land use designation and zoning district. As such, Alternative 2 would be a discretionary project pursuant to CEQA and require CEQA environmental review. Alternative 2 would be the development of the Project with the same proposed uses of the Project but on a reduced scale of approximately 75 percent of the Proposed Project's size. This reduction would result in 129 single family units on the same 44.97-acre parcel. Assuming that the average parcel size of 7,450 sf for the Proposed Project would also be used in Alternative 2, Alternative 2 would result in 7.3 more acres of open space than the Proposed Project[1].

ES-5.3 Alternative 3: Smaller Project

Alternative 3 would allow for residential densities consistent with the Oroville Airport B1 Compatibility Zone of 0.1 dwelling unit per acre (1 unit per 10 acres). Those portions of the Project that are within the B2 Compatibility Zone would be developed at residential densities proposed by the Project. According to information provided by the Butte County Department of Development Services, Planning Division,

[1] Proposed Project = 172 lots x 7,450 sf = 1,281,400 sf (29.4 acres). Alternative 2 = 129 lots x 7,450 s . = 961,050 sf (22.1 acres). 29.4 acres - 22.1 acres = 7.3 acres.

Airport Land Use Commission (2022), approximately 35.82 acres of the Project Site is within the B1 Compatibility Zone and 9.15 acres of the Site is within the B2 Compatibility Zone. Based on this information, 41 single family dwellings would be developed in Alternative 3 at the acreage and densities shown in Table 5.0-1. Three single family homes would have an average lot size of 11.94 acres and 38 homes with an average lot size of 10,488 square feet. However, note that these average lot sizes do not account for streets or any open space and are only rough estimates used for this alternative.

ES-6 Areas of Controversy/Issues to be Resolved by Lead Agency

CEQA Guidelines Section 15123(b)(2) requires an EIR to identify areas of controversy or public interest. Prior to the preparation of this EIR, ECORP prepared an Initial Study (IS) and Notice of Preparation (NOP) for the Project (Appendix 1.0). The City of Oroville distributed the IS and NOP for review and comment to the State Clearinghouse (SCH, #2022110054) and interested parties for a 33-day comment period from November 3 to December 5, 2022. Additionally, the City held a scoping meeting which was advertised with the publication of the NOP on November 3, 2022 and scheduled for November 17, 2022 in order to allow early public/agency input and comments about the Project, the IS and future environmental review. No members of the public and agencies attended this meeting. The City received six NOP comment letters, which are summarized in Table 1.0-3 of Section 1.0 of this DEIR.

ES-7 Summary of Impacts and Mitigation Measures

Table S.7-1 presents a summary of Project-specific environmental impacts analyzed and identified in this DEIR, the mitigation measures proposed for those impacts, and the level of significance after mitigation.

The analysis in this DEIR concludes that, although certain impacts are considered significant or potentially significant, the majority of these impacts could be avoided or reduced to less than significant with implementation of mitigation measures. All impacts would be less than significant after the implementation of mitigation measures, with the exception of hazards related to airport safety, noise related to traffic, and traffic related to Vehicle Mile Traveled (VMT), which would remain significant even as no feasible mitigation is possible. Therefore, the Proposed Project would result in significant and unavoidable impacts to hazards and hazardous materials, noise, and transportation.

Table ES-1. Summary of Proposed Project Impacts and Mitigation Measures		
Environmental Impacts	**Mitigation Measures**	**Residual Impact (with Mitigation)**
Notes: NI = No Impact, LTS = Less than Significant, SU = Significant, Unavoidable, CC = Cumulatively Considerable, LTCC = Less than Cumulatively Considerable		
BIOLOGICAL RESOURCES		
BIO-1: Project implementation could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. Impact Determination: *Less than Significant with Mitigation*	**BIO-1:** Implement Erosion Control Measures and BMPs. The Project proponent shall implement erosion control measures and BMPs to reduce the potential for sediment or pollutants at the Project site. Examples of appropriate measures are included below. • Avoided aquatic resources should be clearly demarcated prior to construction. Avoidance buffers should be consistent with the City of Oroville requirements and/or requirements of regulatory permits. Erosion control measures should be placed between avoided aquatic resources and the outer edge of the impact limits prior to commencement of construction activities. Such identification and erosion control measures should be properly maintained until construction is completed and the soils have been stabilized. • Any fueling in the Study Area should use appropriate secondary containment techniques to prevent spills. **BIO-2:** **Worker Environmental Awareness Program.** The Project proponent shall require a mandatory Worker Environmental Awareness Program provided by qualified biologist for all contractors, work crews, and any onsite personnel to aid workers in recognizing special status species and sensitive	LTS

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	biological resources that may occur on-site prior to any construction or grading of the site. The program shall include identification of the special status species and their habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. **BIO-3:** **Special-Status Species – Plants.** There is potential or low potential for 23 special-status plants to occur within the Study Area. The following mitigation measures are required to minimize potential impacts to special-status plants. • Perform floristic plant surveys according to USFWS, CDFW, and CNPS protocols prior to construction. Surveys shall be conducted by a qualified biologist and timed according to the appropriate phenological stage for identifying target species. Known reference populations shall be visited and/or local herbaria records shall be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project site, no further measures pertaining to special-status plants are necessary. • If special-status plants are identified within 25-feet of the Project impact area, implement the following measures:	

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	• If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones shall include the extent of the special-status plants plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist/biological monitor shall be present must occur within the avoidance buffer to ensure special-status plants are not impacted by the work. • If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. Mitigation measures shall be developed in consultation with CDFW. Mitigation measures may include permanent preservation of onsite or offsite habitat for special-status plants and/or translocation of plants or seeds from impacted areas to unaffected habitats. **BIO-4: Special-Status Species – Invertebrates.** There is potential for three federally listed special-status invertebrates to occur within the Study Area. The following mitigation measure is required to minimize potential impacts to special-status invertebrates. • No Project construction shall proceed in areas supporting potential habitat for federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or	

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	lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until incidental take authorization has been issued by USFWS under Section 7 (Biological Opinion) or Section 10 (HCP) of the ESA and the Project proponent has abided by conditions in the BO or HCP, including all conservation and minimization measures. Conservation and minimization measures shall include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction and compensatory mitigation for loss of suitable habitat. **BIO-5:** **Western Spadefoot.** Western spadefoot have potential to occur within the Study Area. Implementation of Mitigation Measures BIO-1, BIO-2, and the following mitigation measure would avoid and/or minimize potential adverse effects to western spadefoot. • A qualified biologist shall conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the Project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, a plan to collect and	

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	relocate adult and larval western spadefoot and egg masses to suitable habitat that will be preserved in perpetuity as required according to the BO in Mitigation Measure BIO-4. **BIO-6:** **Blainville's Horned Lizard.** Blainville's horned lizard have potential to occur within the Study Area. Implementation of Mitigation Measures BIO-1, BIO-2, and the following mitigation measure would avoid and/or minimize potential adverse effects to Blainville's horned lizard. • A qualified biologist shall conduct a preconstruction Blainville's horned lizard survey in Project impact areas within 48 hours prior to construction activities. Any Blainville's horned lizard individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, consult with CDFW to develop avoidance and minimization measures, which may include, but not limited to, fencing avoidance areas, development of a relocation plan, and/or onsite monitoring during site construction. **BIO-7:** **Special-Status Species – Birds.** Three special-status birds and various other protected birds have the potential to nest within	

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	the Study Area. The following mitigation is required to minimize potential impacts to nesting birds: • If construction is to occur during the nesting season (generally February 1 through August 31), conduct a preconstruction nesting bird survey of all suitable nesting habitat on the Project within 14 days of the commencement of construction. The survey shall be conducted within a 500-foot radius of Project work areas for raptors and within a 100-foot radius for other nesting birds. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. Preconstruction nesting surveys are not required for construction activity outside the nesting season. **BIO-8: Swainson's Hawk and Tricolored Blackbird.** The Study Area supports potential foraging habitat for two state-listed birds: Swainson's hawk and tricolored blackbird. The following mitigation is recommended to minimize potential impacts to foraging habitat: • Mitigate for the loss of Swainson's hawk according to the 1994 CDFG's Staff Report Regarding Mitigation for	

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	Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. The required measures to address Swainson's hawk foraging habitat impact and mitigation measure BIO-9 will be sufficient to mitigate impacts to tricolored blackbird foraging habitat.	
BIO-2: Project implementation could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. Impact Determination: *Less than Significant with Mitigation*	Implement Mitigation Measures BIO-1, BIO-2, and BIO-9.	LTS
BIO-3: Project implementation could cause a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Impact Determination: *Less than Significant with Mitigation*	**BIO-9: Sensitive Natural Communities.** The Project site supports potential Waters of the U.S. and State. In addition to Mitigation Measures BIO-1 and BIO-2, the following mitigation measures are required for the protection of aquatic resources: • Submit an aquatic resources delineation for the Project to the USACE and obtain a verification or Preliminary Jurisdictional Determination. • File a request for authorization to fill Waters of the U.S. under the Section 404 of the federal CWA (Section 404 Permit) prior to discharging any dredged or fill materials into any Waters of the U.S. Mitigation measures will be	LTS

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	developed as part of the Section 404 Permit process to ensure no net loss of wetland function and values. To facilitate such authorization, an application for a Section 404 Nationwide Permit (0.5 acre or less of impacts for Nationwide Permit 29-Residential Developments) or an Individual Permit for the Project should be prepared and submitted to USACE. Mitigation for impacts to Waters of the U.S. typically consists of a minimum of a 1:1 ratio for direct impacts; however final mitigation requirements will be developed in consultation with USACE. • If necessary, file a request for a Water Quality Certification or waiver pursuant to Section 401 of the CWA must be obtained from the RWQCB for Section 404 permit actions. • Pursuant to the Porter-Cologne Water Quality Act, a permit authorization from the RWQCB is required prior to the discharge of material in an area that could affect Waters of the State. Mitigation requirements for discharge to Waters of the State within the Project Site will be developed in consultation with the RWQCB.	

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CULTURAL RESOURCES		
CUL-1: Project implementation could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section15064.5. Impact Determination: *Less than Significant with Mitigation*	**CUL-1: Cultural or Archaeological Resource Discovery.** All subdivision improvement plans and grading plans shall include the following: • If subsurface deposits believed to be cultural or human in origin are discovered during any roadway or future construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find: • If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required. • If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City and landowner. If the find is determined to be eligible for inclusion in the NRHP or CRHR, the City shall consult	LTS

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	on a finding of eligibility and implement appropriate treatment measures. Work may not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction. • If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Butte County Coroner (in accordance with Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will	

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	not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.	
CUL-2: Project implementation could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section15064.5. Impact Determination: *Less than Significant with Mitigation*	Implement CUL-1	LTS
CUL-3: Project implementation could disturb any human remains, including those interred outside of formal cemeteries. Impact Determination: *Less than Significant with Mitigation*	Implement CUL-1	LTS

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GEOLOGY, SOILS AND PALEONTOLOGICAL RESOURCES		
GEO-1: Project implementation could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. Impact Determination: *Less than Significant with Mitigation*	**PALEO-1: Discovery of Unknown Paleontological Resources.** If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify the City. The Project proponent shall retain a qualified paleontologist to evaluate the find and to prescribe mitigation measures to reduce impacts to a less than significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.	LTS
HAZARDS AND HAZARDOUS MATERIALS		
HAZ-1: If the Proposed Project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the Proposed Project could result	No feasible mitigation possible.	SU

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in a safety hazard or excessive noise for people residing or working in the Project Area.		
HAZ-2: Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative impacts regarding safety hazard or excessive noise for people residing or working in the Project area. Impact Determination: *Cumulatively Considerable and Significant and Unavoidable*	No feasible mitigation possible.	CC and SU
NOISE		
NOI-1: Project implementation could result in generation of 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. Impact Determination: *Significant and Unavoidable*	No feasible mitigation possible.	SU
NOI-4: Would implementation of the Proposed Project, in combination with existing, approved, proposed, and reasonably	No feasible mitigation possible.	CC and SU

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foreseeable development in Butte County, result in a cumulatively considerable noise impact? Impact Determination: *Cumulative Considerable and Significant and Unavoidable*		
PUBLIC SERVICES		
PUB-1: Project implementation could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered 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 fire, police, schools, and/or other public facilities. Impact Determination: *Less than Significant with Mitigation*	**PUB-1: Annexation into CFD 2006-01 and CFD 2006-02.** Prior to recordation of the Final Map, the Project shall annex into both CFD 2006-01 and CFD 2006-02.	LTS
TRANSPORTATION		
TR-2: Project implementation could conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Impact Determination: *Significant and Unavoidable*	**TR-1: Provide Pedestrian Network Improvements.** Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT.	SU

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	The Project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The Project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated. Some aspects of this measure are already included in the Proposed Project. Increasing the use of pedestrian improvements would further reduce Project-related VMT. The range of effectiveness of this measure as described by BCAG is from 0.5 percent to 5.7 percent. **TR-2:** **Provide Traffic Calming Measures.** Providing traffic calming measures encourages people to walk or use bicycles instead of using a vehicle. This mode shift will result in a decrease in VMT. Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips	

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	with street trees, chicanes/chokers, and others. Some aspects of this measure are already included in the Proposed Project. Increasing the use of traffic calming measures would further reduce Project-related VMT. The range of effectiveness of this measure as described by BCAG is from 0 to 1.7 percent. **TR-3:** **Contribute to a 20th Street Bicycle Facility.** Providing bicycle facilities reduces VMT by encouraging use of non-vehicular forms of transportation. Connecting to existing bicycle facilities would provide access to Project site residents to a larger network of facilities. The Project applicant shall contribute a fair share portion of the cost toward construction of the bikeway. Because the Bicycle Transportation Plan does not specify whether the 20th Street bikeway would be a Class I or Class II facility, it is not known whether the bikeway would be on 20th Street or separate from the roadway. For the same reason, it is not known what the cost of the bikeway would be. As such, the Project's fair share portion shall be negotiated between the applicant and the City of Oroville.	
TR-4: Would the project, when considered with existing, proposed, planned, and approved development in the region, implementation of the proposed project would contribute to cumulative traffic	Implement TR-1, TR-2, and TR-3	CC and SU

Table ES-1. Summary of Proposed Project Impacts and Mitigation Measures		
Environmental Impacts	**Mitigation Measures**	**Residual Impact (with Mitigation)**
Notes: NI = No Impact, LTS = Less than Significant, SU = Significant, Unavoidable, CC = Cumulatively Considerable, LTCC = Less than Cumulatively Considerable		
volumes on local roadways that result in significant impacts to level of service and operations? Impact Determination: *Cumulative Considerable and Significant and Unavoidable*		
TRIBAL CULTURAL RESOURCES		
TCR-1: Project implementation could cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074. Impact Determination: *Less than Significant with Mitigation*	Implement CUL-1	LTS

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APPENDICES

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

Term	Description
°C	Degrees Celsius
°F	Degrees Fahrenheit
AB	Assembly Bill
ABP	Airport Business Park
AF	acre feet
AFY	Acre-Feet Per Year
AIA-O	Airport Influence Area Overlay
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMSL	Above Mean Sea Level
APE	Area of Potential Effects

Term	Description
APN	Assessor's Parcel Number
AWSC	All-Way Stop-Control
BA	Biological Assessment
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BCC	Bird of Conservation Concern
BCFD	Butte County Fire Department
BLM	Bureau of Land Management
BO	Biological Opinion
BP	Before Present
BRA	Biological Resources Assessment
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CHRIS	California Historical Resources Information System
City	City of Oroville
CNEL	Community Noise Equivalent Level
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibels
DEIR, Draft EIR	Draft Environmental Impact Report
DOF	Department of Finance

Term	Description
DPM	Diesel Particulate Matter
Draft SEIR	Draft Supplemental EIR
DWR	Department of Water Resources
EIR	Environmental Impact Report
Element	Open Space, Natural Resources, and Conservation Element
EO	Executive Order
EPS	Emissions Performance Standard
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act (
FTA	Federal Transit Administration
FY	Fiscal Year
GHG	Greenhouse Gas
GLO	General Land Office
gpd	gallons per day
Handbook	*California Airport Land Use Planning Handbook*
HCP	Habitat conservation Plan
HMMH	Harris, Miller, Miller & Hanson, Inc.
hp	Horsepower
Hz	Hertz
I-5	Interstate 5
IEPR	Integrated Energy Policy Report
IS	Initial Study
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
KDA	KD Anderson & Associates, Inc.
kV	Kilovolt
KWh	Kilowatt-Hours
L_{dn}	Day-Night Average
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Noise Level
L_{min}	Minimum Noise Level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
Mgd	Million Gallons Per Day
MLD	Native American Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Plan
Mwh	Megawatt hour
MTP	Metropolitan Transportation Plan
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCHRP	National Cooperative Highway Research Program

Term	Description
NEIC	Northeastern Information Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOP	Notice of Preparation
NO_x	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NPS	National Park Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NWPR	National Wetlands Protection Rule
O_3	Ozone
OFD	Oroville Fire Department
OMA	Oroville Municipal Airport
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric Company
PM_{10}	Particulate Matter Less than 10 Microns in Diameter, Coarse Particulate Matter
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
ppm	Parts Per Million
PPV	Peak Particle Velocity
Proposed Project	Feather Ranch Project
PRC	Public Resources Code
PRPA	Paleontological Resources Preservation Act
RHNA	Regional Housing Needs Assessment
RMS	Root Mean Square
ROG	Reactive Organic Gas
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFER	Staffing for Adequate Fire and Emergency Response
SB	Senate Bill
SC-OR	Sewerage Commission – Oroville Region's
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse
SCS	Sustainable Communities Strategy
sf	Square Foot/Feet
SIP	State Implementation Plan
SLF	Sacred Lands File
SO_2	Sulfur Dioxide

Term	Description
SOI	Sphere of Influence
SR	State Route
SSC	Species of Special Concern
STC	Sound Transmission Class
SVAQEEP	Sacramento Valley Air Quality Engineering and Enforcement Professionals
SWPPP	Stormwater Pollution Prevention Plan
TAC	Toxic Air Contaminant
TAZ	Traffic Analysis Zone
TCRs	Tribal Cultural Resources
TIS	Traffic Impact Study
TMDP	2007 Thermalito Master Drainage Plan
TWSD	Thermalito Water and Sewer District
UCMP	University of California Museum of Paleontology
USACE	United States Army Corp of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
WEAL	Western Electro-Acoustic Laboratory, Inc.
WTF	Wastewater Treatment Facility

1.0 INTRODUCTION

1.1 Purpose of the Draft EIR

This Draft EIR identifies and evaluates the potential environmental impacts associated with the implementation of the Proposed Project. The Project entails the subdivision of a 44.97-acre site into 172 single-family lots in Oroville California.

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that informs agency decision makers and the general public of the potentially significant environmental impacts of a project, identifies ways to minimize the significant impacts, and describes a reasonable range of alternatives to the project. CEQA requires that an EIR be prepared by the agency with primary responsibility over the approval of a project (referred to as the Lead Agency). The City of Oroville (City) as the Lead Agency has prepared this DEIR in accordance with the CEQA (PRC Sections 21000 et. seq.) and the Guidelines for the Implementation of CEQA (CCR Title 14, Sections 15000 et seq.).

This DEIR is intended to provide information to public agencies and the general public regarding the potential direct, indirect, and cumulative environmental impacts associated with the Proposed Project. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development, where feasible, and are obligated to balance a variety of public objectives including economic, environmental, and social factors in their decision making. The City has determined that an EIR is the appropriate CEQA documentation due to the potential for significant environmental impacts that could result from approval of the requested actions and development of the Proposed Project. This Draft EIR evaluates the existing environmental conditions in the area, analyzes potential environmental impacts due to the implementation of the Project, and identifies feasible mitigation measures that could avoid or reduce the magnitude of those impacts. CEQA requires a Lead Agency neither approve nor implement a project unless significant environmental impacts have been reduced, or, if a Lead Agency approves the project even though significant impacts identified in the DEIR cannot be fully mitigated, the Lead Agency must state in writing the reasons for its action by adopting Findings and a Statement of Overriding Considerations (CEQA Guidelines Section 15091).

Table 1.1. Anticipated Agency Approvals and Reviews

Agency	Permit or Approval
City of Oroville City Council	• Certification of the EIR, • Approval of a General Plan Amendment to change the land use designation for the site from Airport Business Park to Residential -Single Family, • Approval of a Rezoning from Airport Business Park (ABP)and Airport Influence Area Overlay (AIA-O) to Single Family Residential (R-1), and • Approval of the Tentative Subdivision map

1.2 Known Trustee and Responsible Agencies

Other public agencies may use this DEIR to issue approvals and permits related to the Proposed Project. For the purpose of CEQA, the term *trustee agency* means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of California. In CEQA, the term *responsible agency* includes all public agencies other than the lead agency that may have approval authority in some regard associated with the Proposed Project. A list of agency approvals that may be required to implement the Proposed Project is provided in Table 1.2. The types of actions that these agencies, as well as other agencies not included on this list, may take in connection with the Proposed Project include, but may not be limited to the following:

- Approve, adopt, or amend applicable plans, policies, or programs,
- Make findings of consistency,
- Approve and issue permits,
- Approve agreements,
- Provide authorization and approval of funding, and
- Provide service.

Table 1.2. Potential Trustee and Responsible Agency Approvals and Reviews

Agency	Review
Butte County Air Quality Management District (BCAQMD)	Dust control plan
Central Valley Regional Water Quality Control Board	Construction General Permit
Butte County Airport Land Use Commission	Review of the Feather Ranch Project for compliance with the Oroville Municipal Airport Land Use Plan

1.3 Type of Document

CEQA and the CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR is for a specific development project with defined parameters. As such, this EIR is a *project* EIR. Project EIRs are defined by CEQA Guidelines (Section 15161) as:

> "The most common type of EIR examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation."

1.4 Intended Use of the EIR

This Draft EIR is intended to evaluate the environmental impacts of the Project based on an equal level analysis of the three proposed alternatives. This EIR in its final form will be used by the City in considering approval of the Proposed Project. In accordance with CEQA Guidelines Section 15126, the EIR will be used as the primary environmental document in consideration of all subsequent planning and permitting actions associated with the Project, to the extent such actions require CEQA compliance and as otherwise permitted under applicable law.

1.5 Draft EIR Organization

This DEIR is organized as follows:

- The Summary provides summary information on the Project location and setting, Project characteristics, areas of controversy and issues to be resolved, Project alternatives, and a summary of impacts and mitigation measures.
- Section 1.0 of the DEIR provides an introduction to the Proposed Project, the purpose of the DEIR, a description of the organization of the DEIR, the intended uses of the DEIR, and a description of the public review process.
- Section 2.0 provides a description of the Project location, Project objectives, and the elements of the Proposed Project.
- Section 3.0 provides the environmental analysis of the Proposed Project. This includes the description of the regulatory background, environmental setting (existing conditions), the analysis of environmental impacts, and a discussion of mitigation measures to reduce or eliminate any significant environmental impacts.
- Section 4.0 addresses other aspects of compliance with CEQA including a description of significant and unavoidable adverse impacts, effects found not to be significant, significant irreversible environmental changes, and growth-inducing impacts.
- Section 5.0 discusses the alternatives considered and rejected, alternatives considered and analyzed, and potential environmental impacts of implementing alternatives to the Proposed Project, including the No Project Alternative. This chapter also identifies the Environmentally Superior Alternative in accordance with CEQA Guidelines Section 15126.6(e)(2).
- Section 6.0 provides the references used to prepare the EIR.
- Section 7.0 provides a list of the DEIR preparers.
- Appendices contain information that supplements or supports the DEIR.

1.6 Environmental Review Process

1.6.1 Notice of Preparation and Initial Study

In accordance with the CEQA Guidelines, the City of Oroville, as Lead Agency, prepared an IS and NOP for an EIR on the Proposed Project. A copy of the IS and NOP are provided in Appendix 1.0-A1. The City of Oroville distributed the IS and NOP for review and comment to the SCH (#2022110054) and interested parties for a 33-day comment period from November 3 to December 5, 2022.

CEQA Guidelines Section 15063 (c) provides the purpose and use of an IS. Section 15063(c) is as follows:

(c) Purposes. The purposes of an Initial Study are to:

(1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration.
(2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
(3) Assist in the preparation of an EIR, if one is required, by:

(A) Focusing the EIR on the effects determined to be significant,
(B) Identifying the effects determined not to be significant,
(C) Explaining the reasons for determining that potentially significant effects would not be significant, and
(D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.

(4) Facilitate environmental assessment early in the design of a project;
(5) Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment;
(6) Eliminate unnecessary EIRs;
(7) Determine whether a previously prepared EIR could be used with the project.

The IS determined that the Proposed Project would have a less than significant impact or no impacts in the following IS analysis areas:

Aesthetics,
Agriculture and Forest Resources,
Geology and Soils,
Hazards and Hazardous Materials (except for airport hazards),
Hydrology and Water Quality,
Mineral Resources,
Public Services (except for fire protection),
Recreation,
Wildfires
Utilities (except for wastewater services).

1.6.2 Scoping Meeting

The scoping meeting was advertised with the publication of the NOP on November 3, 2022 and scheduled for November 17, 2022 in order to allow early public/agency input and comments about the Project, the

IS and future environmental review. No members of the public and agencies attended this meeting. The City received six NOP comment letters, summarized in Table 1-3. The comment letters are included in Appendix 1.0-A2. These comments were considered as a part of the EIR analysis.

Table 1-3. NOP Comments

Name of Commenter/ Agency	Comment Summary
California Department of Fish and Wildlife	The comment letter provides CDFW's role in the protection of fish and wildlife in the state identifying CDFW as a trustee and responsible agency under CEQA. The letter also provides guidance for the assessment of biological resources including the information that should be provided in a Biological Assessment (BA). The comment letter continues and states that the EIR should provide a thorough discussion of the Project's potential direct, indirect, and cumulative impacts on biological resources and provides information that should be discussed in an EIR. The letter states that the EIR 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. The letter provides information on special-status species levels and the requirement for mitigation of impacts to these species. The letter also discusses the California Endangered Species Act (ESA), the Native Plant Protection Act (NPPA), the Lake and Streambed Alteration Program, and required filing fees.
Native American Heritage Commission	The comment letter provides the requirements for Native American consultation pursuant to Assembly Bill (AB) 52. The letter also provides information regarding mitigation for impacts to Tribal Cultural Resources (TCRs) and recommendations for cultural resources assessments.
Butte County Air Quality Management District	The comment letter provides information on air pollutant screening threshold for the air district and recommends using the latest version of California Emissions Estimator Model (CalEEMod) to perform modeling and quantification of pollutants created by construction and operational activities to estimate impacts of criteria air pollutants as well as greenhouse gases.
Washoe Tribe of Nevada and California	The response to the NOP states "At this time we have no interest in the project."
Butte County Public Works	The comment letter expresses concern about roadway improvements necessary to meet the transportation and safety demands associated with the project and that impact studies be performed, referencing the Butte County 2007 Thermalito Master Drainage Plans (updated in 2009), which provides drainage information in the area and provides a consistent area-wide analysis.
Jeanette Morton	The comment letter expresses opposition to the project unless the City does something to address the lack of adequate response in regard to fire in the area.

1.6.3 Draft EIR

As a result of the IS analysis, comments received during the NOP scoping meeting and public review period, the City determined that the Proposed Project could have significant environmental impacts to certain environmental resources and that an EIR should be prepared. These environmental resources

include air quality, biological resources, cultural resources, energy, greenhouse gas and climate change, hazards and hazardous materials (airport hazards only), noise, paleontological resources, population and housing, public services (fire protection only) , transportation, tribal cultural resources and utilities (wastewater services only). This Draft EIR provides this analysis.

This document constitutes the Draft EIR. The Draft EIR contains a description of the Project, a description of the environmental setting, identification of Project impacts, alternatives, and feasible mitigation measures for impacts found to be significant. Upon completion of the Draft EIR, the City will file the Notice of Completion (NOC) with the California Office of Planning and Research (OPR) to begin the public review period (PRC Section 21161).

1.6.4 Public Notice/Public Review

Concurrent with the NOC, the City will provide public notice of the availability of the Draft EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties. The public review and comment period is 45 days. Notice of the time and location of any public meetings and hearings will be published prior to the meeting/hearing in accordance with applicable law. All comments or questions regarding the Draft EIR should be addressed to:

Wes Ervin, Principal Planner
City of Oroville
1735 Montgomery Street
Oroville, California 95965

Comments may also be sent to Mr. Ervin via e-mail at: wervin@cityoforoville.org

1.6.5 Response to Comments/Final EIR

Following the public review period, a Final EIR (FEIR) will be prepared. The FEIR will respond to all comments received during the public review period that raise significant environmental concerns and may contain any necessary revisions to the Draft EIR. The Draft EIR, as revised and combined with responses to comments, will constitute the Final EIR.

1.6.6 Certification of the EIR/Project Consideration

The City Council will review and consider the FEIR. If the City Council finds that the FEIR is *adequate and complete*, the City Council may certify the FEIR. Additionally, upon review and consideration of the FEIR, the Council may take action to approve, revise, or reject the Proposed Project. Any decision to approve the Project would be accompanied by written findings in accordance with CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program (MMRP), as described below, must also be adopted for mitigation measures that have been incorporated into or imposed on the Project to reduce or avoid significant effects on the environment. The MMRP will be designed to ensure that these measures are enforceable and carried out during Project implementation.

1.6.7 Mitigation Monitoring and Reporting Program

CEQA Section 21081.6(a) requires lead agencies to adopt an MMRP to describe measures that will be adopted and made a condition of Project approval in order to mitigate or avoid significant effects on the environment. The specific reporting or monitoring program required by CEQA is not required to be included in the EIR; however, it must be presented to the City Council for adoption.

Throughout the EIR, mitigation measures for potentially-significant environmental impacts have been clearly identified and presented in language that will facilitate establishment of an MMRP. Any mitigation measures adopted by the City Council as conditions for approval of the Project will be included in an MMRP to ensure enforceability and verify compliance.

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2.0 PROJECT DESCRIPTION

2.1 Project Location and Setting

The Project is located directly southwest of the Feather Avenue/20th Street intersection in City of Oroville, California. Assessor's Parcel Number (APN) 030-230-098 (Figures 2-1 and 2-2). The Project is 44.97 acres in size. The Surrounding uses include single-family homes and vacant land to the east of the Project Site. Rural residential uses and vacant land lie to the north of the Project Site; vacant land lies to the west of the Site, with rural residential uses and vacant land to the south. The Oroville Municipal Airport (OMA) is approximately 0.75 mile to the south of the Project Site and the Thermalito Forebay is 0.5 mile to the north (Figure 2-3).

2.2 Project Objectives

Project objectives are required to be provided in an EIR. CEQA Guidelines Section 15124(b) states that:

> "[a] clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the Project and may discuss the Project benefits."

The Project objectives area as follows:

- Develop an economically feasible housing plan that is compatible with the surrounding community in a low fire risk zone to provide permanent housing relief for the 50,000 displaced Paradise fire survivors.
- Fulfill the housing needs of the state, City of Oroville, and County of Butte by rezoning un-used isolated airport business park land to medium density residential homes to help address the current RHNA. The housing units will be market-rate for-sale units.
- Create a vibrant residential community by providing a like-kind residential project that further adds to eastern Oroville's current and future neighborhoods. The Project will include lots of 6,000 sf or larger, setback and landscaping buffers.
- Provide a well-connected open space network that includes the addition of a neighborhood park, bicycle paths and pedestrian sidewalks, open space buffers, and a space for recreational activities.
- Incorporate the Building Code requirements for energy efficiencies and water savings.

2.3 Project Description

The Proposed Project is the subdivision of a 44.97-acre site into 172 single-family lots located at the southwest corner of the Feather Avenue/20th Street intersection in the City of Oroville, California. Figure 2-4 provides the Project Site Plan. Lots will range in size from 6,600 to 9,410 sf, average lot size is 7,450 sf. The

subdivision is proposed as a phased map. Phase 1 proposes 68 lots, Phase 2 proposes 58 lots, and Phase 3 proposes 46 lots (Figure 2-4).

Lots within the Project will be served by a grid of internal cul-de-sac streets, including curbs, gutters and sidewalks. The Project's north/south running street (Street *A*) will be the connecting street for all of the cul-de-sac streets. The Project will also construct an extension of Feather Avenue on the north Project boundary and Biggs Avenue on the south Project boundary. These two streets, along with the existing 20th Street, will provide Project access. All streets will be built to City of Oroville roadway standards (Figure 2-5). Improvements to 20th Street include curbs, gutters and sidewalks adjacent to the Project Site.

The Project includes amenities such as a passive park on Lot A with pedestrian pathways and a storm drainage basin. The Project also includes the development of a bicycle/pedestrian meandering pathway along the east side of Street A separated from the street by greenway space and bicycle/pedestrian pathway connections from the east end of Project streets to 20th Street.

Storm drainage improvements will include the installation of underground storm drain pipes and storm water leach trenches beneath the curb, gutter and sidewalk to detain and percolate additional runoff generated by the Project improvements. Figures 2-5 through 2-8 show storm drain trench locations and detail. The Project storm drain system will connect to the existing City of Oroville storm drain facilities in 20th Street.

The Project Site is currently within the City of Oroville General Plan land use designation of Airport Business Park (ABP) and zoning district of ABP with an Airport Influence Area Overlay (AIA-O). None of these designations allow the development of residential uses at the density of 3.82 units per acre requested for the Proposed Project. As a part of the Project, a General Plan amendment changing the Project Site to Medium Low Density Residential (3 to 6 units per acre) and a rezoning to Single Family Residential (R-1) has been requested.

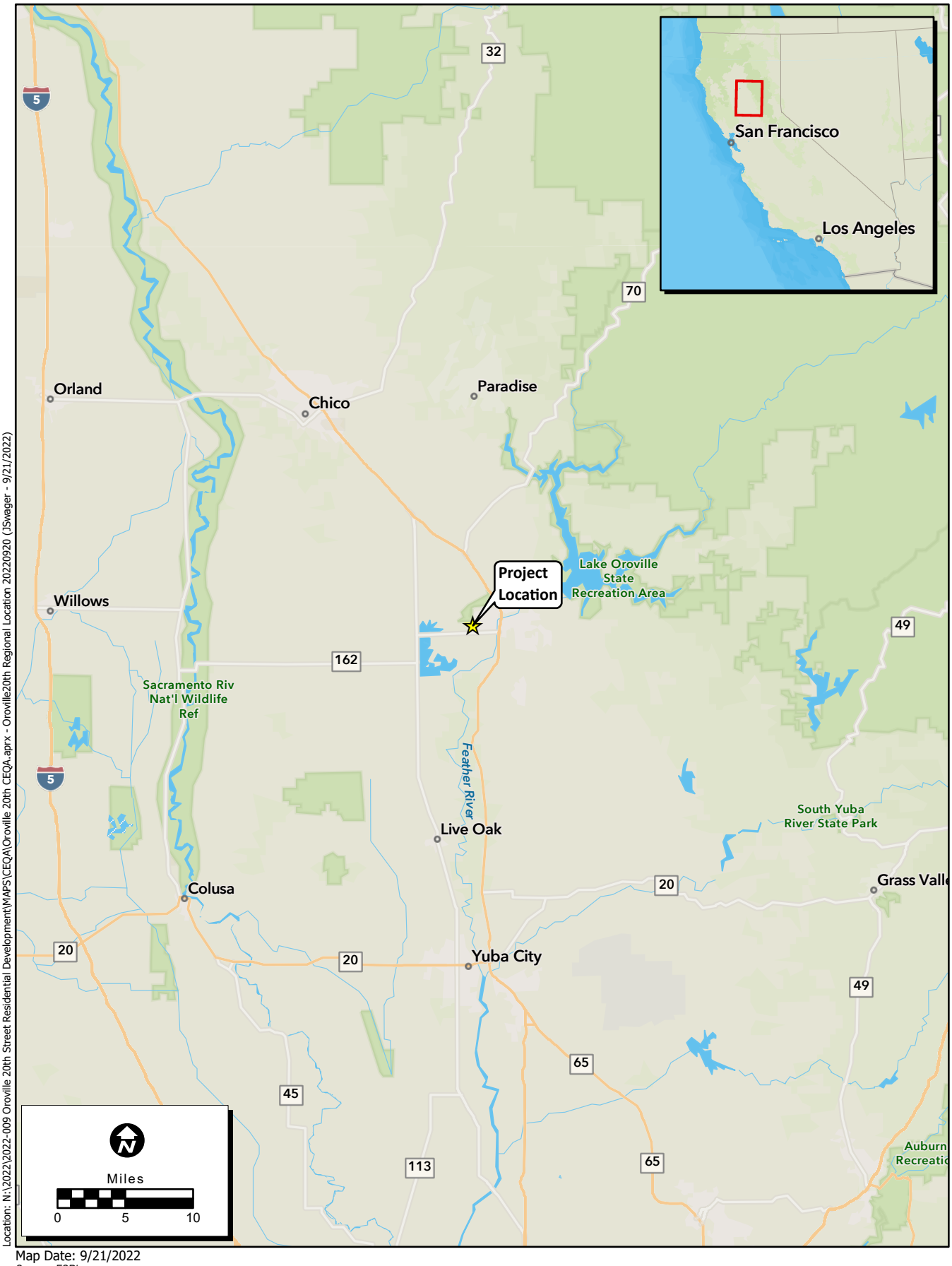
The Project Site is also within the B1 and B2 Compatibility Zones for the Oroville Municipal Airport Compatibility Land Use Plan. The B1 zone allows residential development of 0.1 units per acre and the B2 zone residential development of 0.5 units per acre. As such, these Compatibility Zones do not allow residential development at the density proposed for the Project. The consequence of the Project Site being within the B1 and B2 zones is explained further in Section 3.8 of this Draft EIR.

The Project Site is currently vacant undeveloped land. Elevations range from 230 feet Above Mean Sea Level (AMSL) at the southwest corner of the Project Site to 190 feet AMSL at the northeast corner, generally sloping from west to east.

City-required approvals include a General Plan amendment, rezone, and a tentative subdivision map.

2.3.1 Construction Timing

Construction is anticipated to start in 2024 and last through 2026. The construction will be phased as follows: Phase 1 (Lots 1-68) to occur in 2024, Phase 2 (Lots 69-126) in 2025, and Phase 3 (Lots 141-172) in 2026.



Location: N:\2022\2022-009 Oroville 20th Street Residential Development\MAPS\CEQA\Oroville 20th CEQA.aprx - Oroville20th Regional Location 20220920 (JSwager - 9/21/2022)

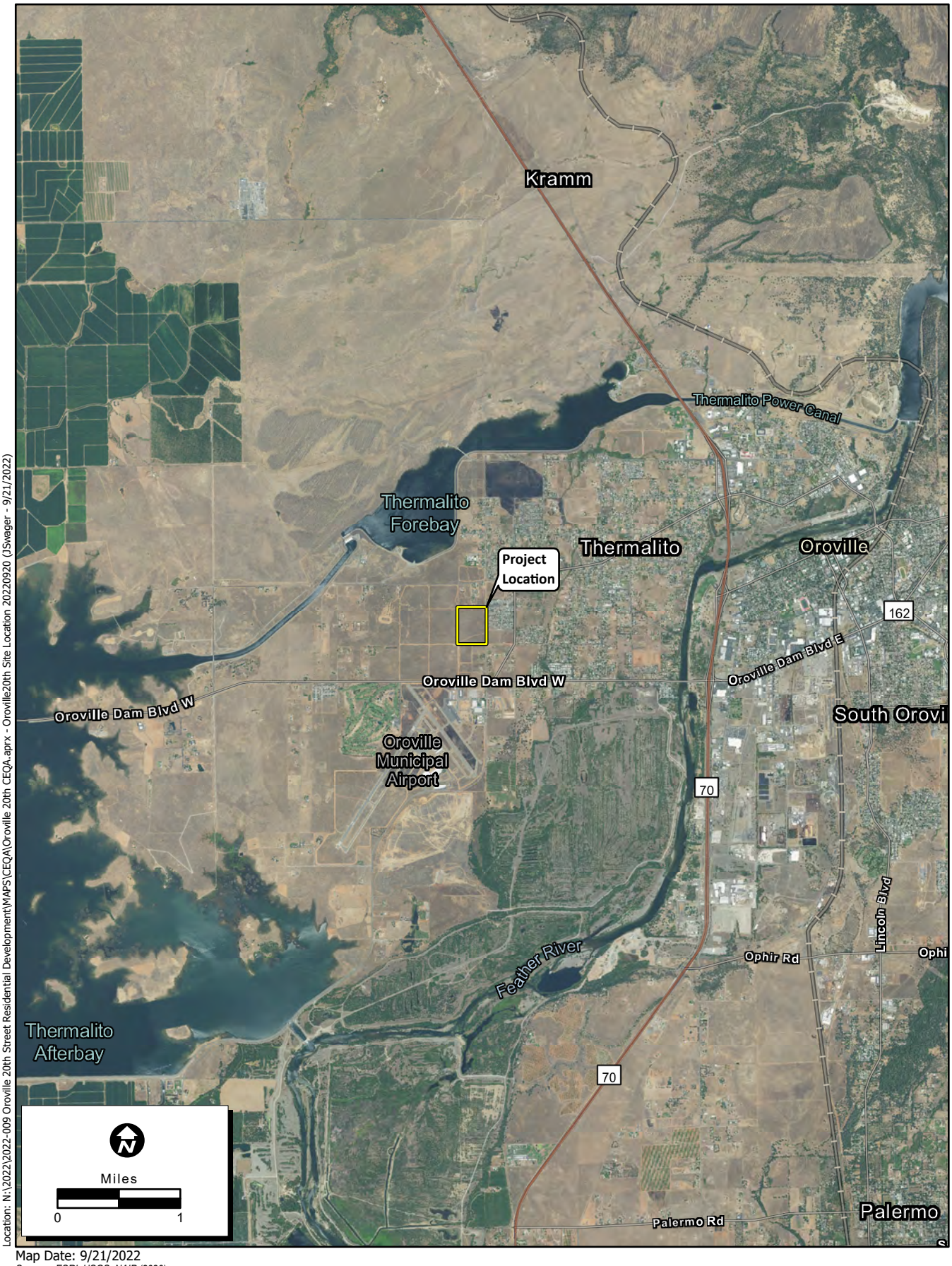
Map Date: 9/21/2022

Sources: ESRI

Figure 2-1. Regional Location

2022-009/Feather Ranch Project

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



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Map Date: 9/21/2022

Sources: ESRI, USGS, NAIP (2020)

Figure 2.2. Site Location

2022-009/Feather Ranch Project

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: N:\2022\2022-009 Oroville 20th Street Residential Development\MAPS\CEQA\Oroville 20th CEQA.aprx - Oroville20th Surrounding LandUse 202209201 (JSwager - 9/21/2022)

Map Date: 9/21/2022

Sources: ESRI, USGS, NAIP (2020)

Figure 2-3. Surrounding Uses

2022-009/Feather Ranch Project

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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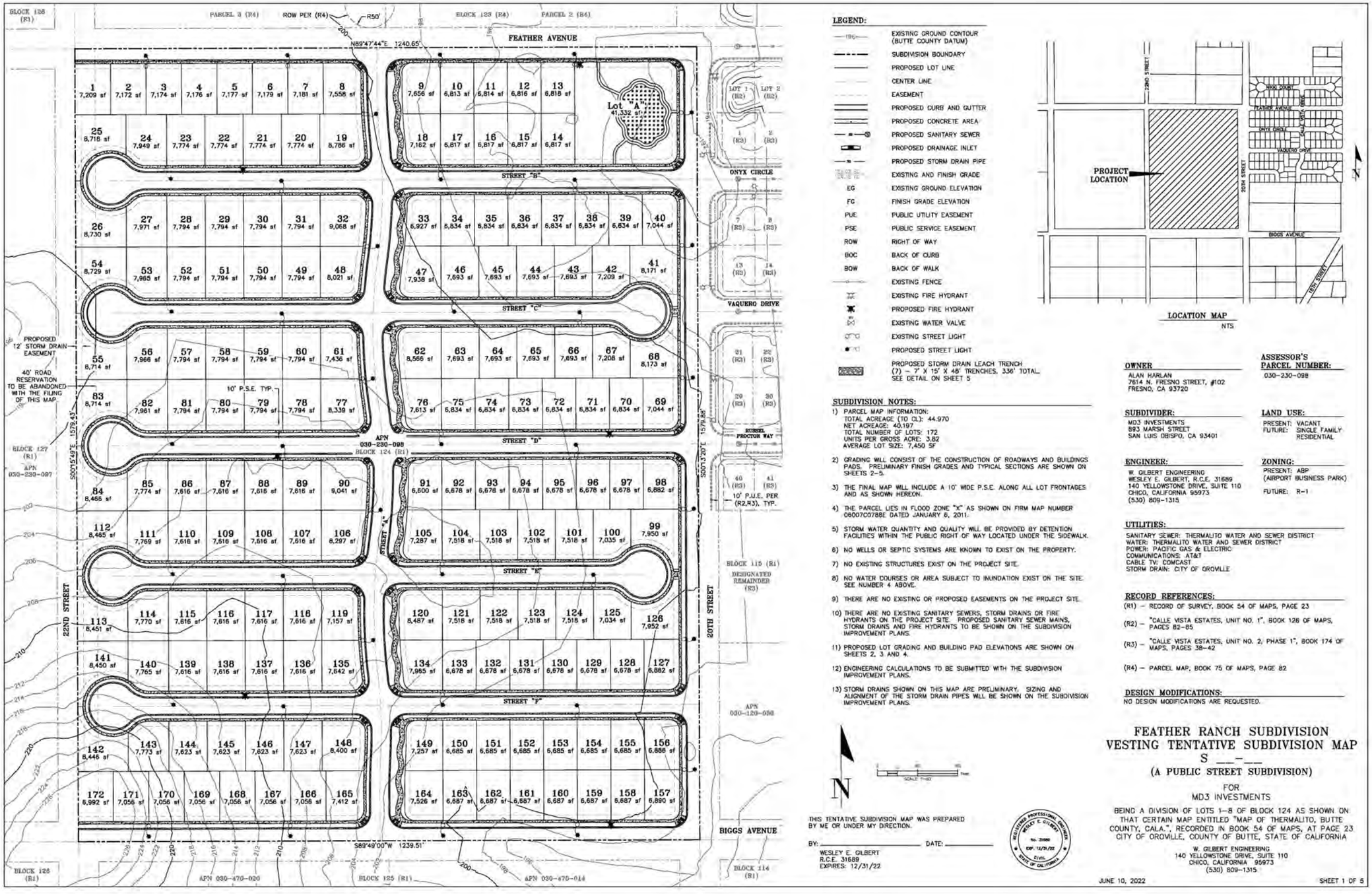

LEGEND:

- EXISTING GROUND CONTOUR (BUTTE COUNTY DATUM)
- SUBDIVISION BOUNDARY
- PROPOSED LOT LINE
- CENTER LINE
- EASEMENT
- PROPOSED CURB AND GUTTER
- PROPOSED CONCRETE AREA
- PROPOSED SANITARY SEWER
- PROPOSED DRAINAGE INLET
- PROPOSED STORM DRAIN PIPE
- EXISTING AND FINISH GRADE
- EG — EXISTING GROUND ELEVATION
- FG — FINISH GRADE ELEVATION
- PUE — PUBLIC UTILITY EASEMENT
- PSE — PUBLIC SERVICE EASEMENT
- ROW — RIGHT OF WAY
- BOC — BACK OF CURB
- BOW — BACK OF WALK
- EXISTING FENCE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- PROPOSED STORM DRAIN LEACH TRENCH (7) – 7' X 15' X 48' TRENCHES, 336' TOTAL. SEE DETAIL ON SHEET 5

LOCATION MAP
NTS

SUBDIVISION NOTES:

1) PARCEL MAP INFORMATION:
TOTAL ACREAGE (TO CL): 44.970
NET ACREAGE: 40.197
TOTAL NUMBER OF LOTS: 172
UNITS PER GROSS ACRE: 3.82
AVERAGE LOT SIZE: 7,450 SF

2) GRADING WILL CONSIST OF THE CONSTRUCTION OF ROADWAYS AND BUILDINGS PADS. PRELIMINARY FINISH GRADES AND TYPICAL SECTIONS ARE SHOWN ON SHEETS 2–5.

3) THE FINAL MAP WILL INCLUDE A 10' WIDE P.S.E. ALONG ALL LOT FRONTAGES AND AS SHOWN HEREON.

4) THE PARCEL LIES IN FLOOD ZONE "X" AS SHOWN ON FIRM MAP NUMBER 06007C0788E DATED JANUARY 6, 2011.

5) STORM WATER QUANTITY AND QUALITY WILL BE PROVIDED BY DETENTION FACILITIES WITHIN THE PUBLIC RIGHT OF WAY LOCATED UNDER THE SIDEWALK.

6) NO WELLS OR SEPTIC SYSTEMS ARE KNOWN TO EXIST ON THE PROPERTY.

7) NO EXISTING STRUCTURES EXIST ON THE PROJECT SITE.

8) NO WATER COURSES OR AREA SUBJECT TO INUNDATION EXIST ON THE SITE. SEE NUMBER 4 ABOVE.

9) THERE ARE NO EXISTING OR PROPOSED EASEMENTS ON THE PROJECT SITE.

10) THERE ARE NO EXISTING SANITARY SEWERS, STORM DRAINS OR FIRE HYDRANTS ON THE PROJECT SITE. PROPOSED SANITARY SEWER MAINS, STORM DRAINS AND FIRE HYDRANTS TO BE SHOWN ON THE SUBDIVISION IMPROVEMENT PLANS.

11) PROPOSED LOT GRADING AND BUILDING PAD ELEVATIONS ARE SHOWN ON SHEETS 2, 3 AND 4.

12) ENGINEERING CALCULATIONS TO BE SUBMITTED WITH THE SUBDIVISION IMPROVEMENT PLANS.

13) STORM DRAINS SHOWN ON THIS MAP ARE PRELIMINARY. SIZING AND ALIGNMENT OF THE STORM DRAIN PIPES WILL BE SHOWN ON THE SUBDIVISION IMPROVEMENT PLANS.

N

SCALE: 1"=60'

THIS TENTATIVE SUBDIVISION MAP WAS PREPARED BY ME OR UNDER MY DIRECTION.

BY: _____ DATE: _____

WESLEY E. GILBERT
R.C.E. 31689
EXPIRES: 12/31/22

REGISTERED PROFESSIONAL ENGINEER WESLEY E. GILBERT No. 31689 EXP. 12/31/22 CIVIL STATE OF CALIFORNIA

OWNER
ALAN HARLAN
7614 N. FRESNO STREET, #102
FRESNO, CA 93720

SUBDIVIDER:
MD3 INVESTMENTS
893 MARSH STREET
SAN LUIS OBISPO, CA 93401

ENGINEER:
W. GILBERT ENGINEERING
WESLEY E. GILBERT, R.C.E. 31689
140 YELLOWSTONE DRIVE, SUITE 110
CHICO, CALIFORNIA 95973
(530) 809-1315

ASSESSOR'S PARCEL NUMBER:
030-230-098

LAND USE:
PRESENT: VACANT
FUTURE: SINGLE FAMILY RESIDENTIAL

ZONING:
PRESENT: ABP (AIRPORT BUSINESS PARK)
FUTURE: R-1

UTILITIES:
SANITARY SEWER: THERMALITO WATER AND SEWER DISTRICT
WATER: THERMALITO WATER AND SEWER DISTRICT
POWER: PACIFIC GAS & ELECTRIC
COMMUNICATIONS: AT&T
CABLE TV: COMCAST
STORM DRAIN: CITY OF OROVILLE

RECORD REFERENCES:
(R1) – RECORD OF SURVEY, BOOK 54 OF MAPS, PAGE 23
(R2) – "CALLE VISTA ESTATES, UNIT NO. 1", BOOK 126 OF MAPS, PAGES 82–85
(R3) – "CALLE VISTA ESTATES, UNIT NO. 2, PHASE 1", BOOK 174 OF MAPS, PAGES 38–42
(R4) – PARCEL MAP, BOOK 75 OF MAPS, PAGE 82

DESIGN MODIFICATIONS:
NO DESIGN MODIFICATIONS ARE REQUESTED.

FEATHER RANCH SUBDIVISION
VESTING TENTATIVE SUBDIVISION MAP
S ___-___
(A PUBLIC STREET SUBDIVISION)

FOR
MD3 INVESTMENTS

BEING A DIVISION OF LOTS 1–8 OF BLOCK 124 AS SHOWN ON THAT CERTAIN MAP ENTITLED "MAP OF THERMALITO, BUTTE COUNTY, CALA.", RECORDED IN BOOK 54 OF MAPS, AT PAGE 23 CITY OF OROVILLE, COUNTY OF BUTTE, STATE OF CALIFORNIA

W. GILBERT ENGINEERING
140 YELLOWSTONE DRIVE, SUITE 110
CHICO, CALIFORNIA 95973
(530) 809-1315

JUNE 10, 2022 SHEET 1 OF 5

Source: W. Gilbert Engineering

Figure 2-4. Site Plan

2022-009/Feather Ranch Project

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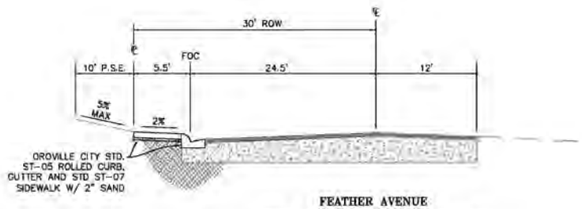
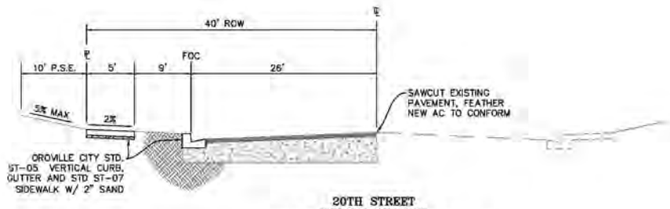


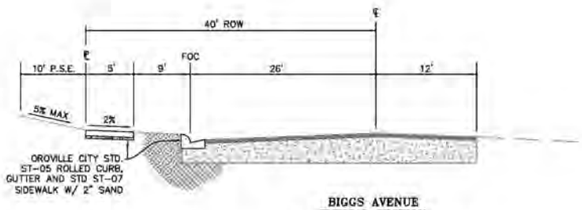
FEATHER AVENUE
TYPICAL SECTION
PUBLIC STREET WITH ON-STREET PARKING

N.T.S.



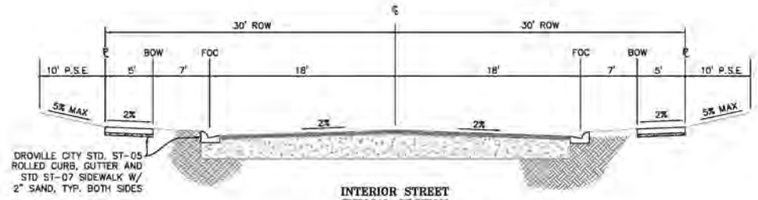
20TH STREET
TYPICAL SECTION
PUBLIC STREET WITH ON-STREET PARKING

N.T.S.



BIGGS AVENUE
TYPICAL SECTION
PUBLIC STREET WITH ON-STREET PARKING

N.T.S.



INTERIOR STREET
TYPICAL SECTION
PUBLIC STREET WITH ON-STREET PARKING

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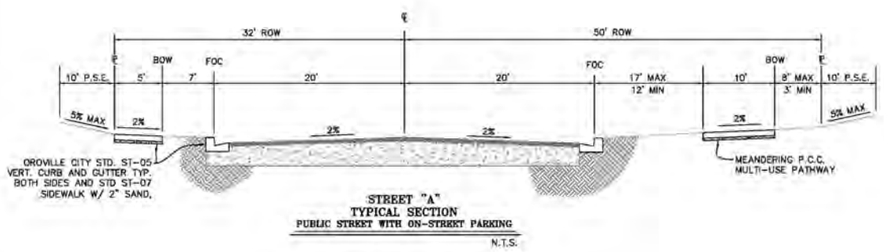
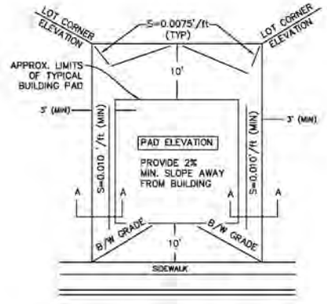


STREET "A"
TYPICAL SECTION
PUBLIC STREET WITH ON-STREET PARKING

N.T.S.



TYPICAL LOT GRADING PLAN

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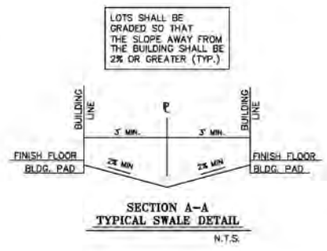

SECTION A-A
TYPICAL SWALE DETAIL

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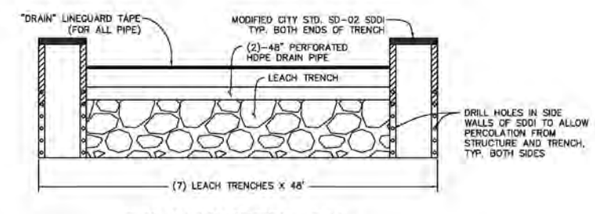
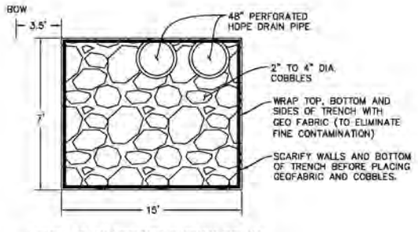


STORM DRAIN LEACH TRENCH DETAIL



STORM DRAIN TRENCH SECTION DETAIL

FEATHER RANCH SUBDIVISION
VESTING TENTATIVE SUBDIVISION MAP
S ---
(A PUBLIC STREET SUBDIVISION)

FOR
MD3 INVESTMENTS

BEING A DIVISION OF LOTS 1-8 OF BLOCK 124 AS SHOWN ON THAT CERTAIN MAP ENTITLED "MAP OF THERMALITO, BUTTE COUNTY, CALA.", RECORDED IN BOOK 54 OF MAPS, AT PAGE 23 CITY OF OROVILLE, COUNTY OF BUTTE, STATE OF CALIFORNIA

W. GILBERT ENGINEERING
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(530) 809-1315

JUNE 10, 2022

SHEET 5 OF 5

Source: W. Gilbert Engineering

Figure 2-5. Street Sections and Storm Drain Leach Trench Detail

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Source: W. Gilbert Engineering

Figure 2.6. Storm Drain Inlets and Leach Trench Locations

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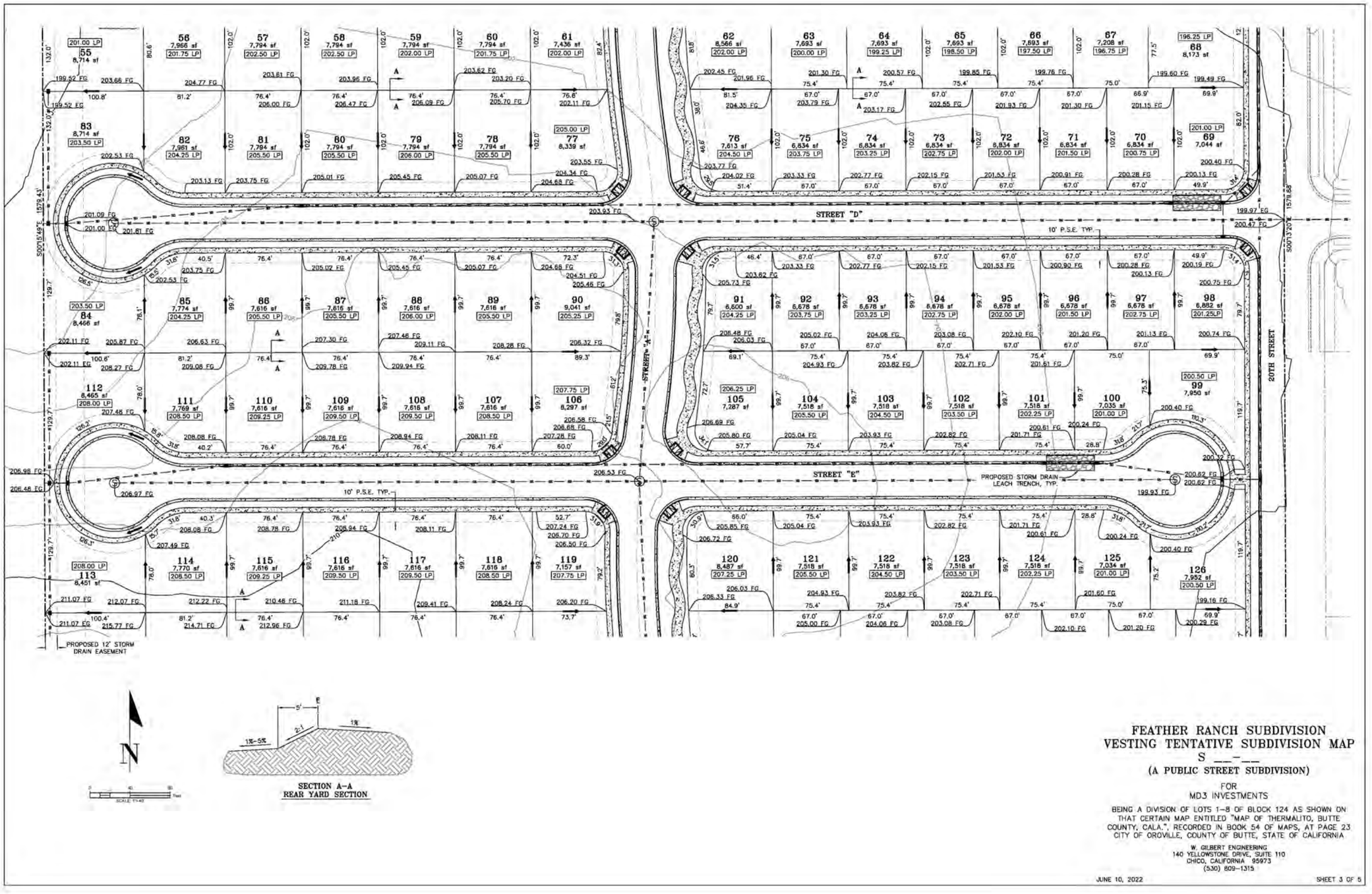

Source: W. Gilbert Engineering

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2-6b. Storm Drain Inlets and Leach Trench Locations (continued)

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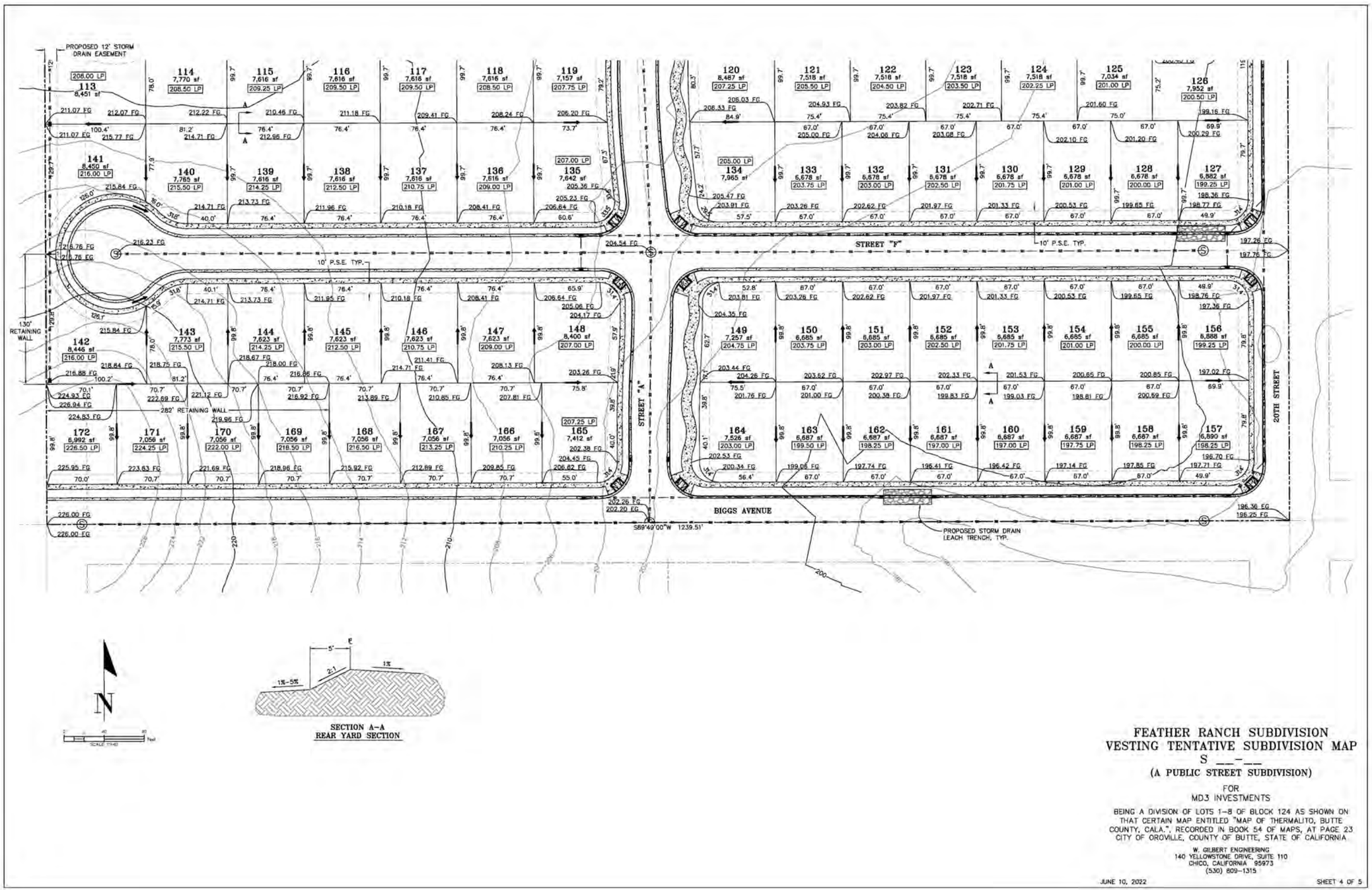

Source: W. Gilbert Engineering

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2-6c. Storm Drain Inlets and Leach Trench Locations (continued)

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3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

3.0.1 Introduction

Chapter 3.0 of this DEIR provides separate sections for each environmental topic. Each section describes the environmental setting (existing conditions) and regulatory setting; direct, indirect, and cumulative impacts from the Proposed Project; and mitigation measures to reduce or avoid significant impacts.

As part of the scoping process described in Section 1.6, the City of Oroville prepared an IS and NOP for an EIR on the Proposed Project and received comments on the scope of the EIR from interested agencies, organizations and individuals (Appendix 1.0). As a result of the scoping process, the City determined that the environmental issue areas to be evaluated in the DEIR are:

- 3.1 Air Quality
- 3.2 Biological Resources
- 3.3 Cultural Resources
- 3.4 Energy
- 3.5 Geology, Soils and Paleontological Resources (paleontological resources only)
- 3.6 Greenhouse Gas and Climate Change
- 3.7 Hazards and Hazardous Materials (airport hazards only)
- 3.8 Land Use
- 3.9 Noise
- 3.10 Population and Housing
- 3.11 Public Services (fire protection only)
- 3.12 Transportation
- 3.13 Tribal cultural Resources
- 3.14 Utilities (wastewater and storm drainage services only)

Issues Not Included for Further Review in this DEIR

In addition to the resource subjects listed in Section 3.1, the City considered other resource subject areas in determining the potential of the Project to result in significant effects. CEQA Guidelines Section 15060(d) enables the lead agency to focus the EIR on the issue areas on which the Project could have significant effect, but the lead agency must provide a brief explanation of the reasons for determining that other effects would not be significant or potentially significant.

Specifically, CEQA contemplates using an IS to identify a project's insignificant and potentially significant effects, and then focuses the project EIR analysis on the areas where potentially significant effects have been identified:

> "Effects dismissed in an Initial Study as clearly insignificant and unlikely to occur need not be discussed further in the EIR unless the Lead Agency subsequently receives information inconsistent with the finding in the Initial Study. A copy of the Initial Study may be attached to the EIR to provide the basis for limiting the impacts discussed." (CEQA Guidelines, § 15143.)

> "An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Such a statement may be contained in an attached copy of an Initial Study" [CEQA Guidelines Section 15128. See also: PRC Sections 21002.1(e), 21100(c); CEQA Guidelines, Sections 15006(d), and 15063(c)(3)].

As discussed in Section1.0, the City prepared and circulated the NOP and IS for this DEIR in November 2022. The NOP and IS are included with this DEIR as Appendix 1.0. The discussion below describes the resource subjects that were previously analyzed in the IS and determined to not require further analysis in this DEIR. For each of the issues listed, the 2022 IS found the Project to have no impact or a less-than-significant impact. Mitigation measures to reduce the level of impact were neither recommended nor required to avoid potentially significant impacts in each of these issue areas.

The decision not to pursue further evaluation in this DEIR considered all six comment letters on the NOP/IS.

Aesthetics

The City's General Plan identifies that views of the Feather River and Table Mountain are considered important scenic views in the City. However, as discussed in the IS, the construction of the Project would not result in any degradation of views of Table Mountain or the Feather River. Additionally, the Proposed Project is not located within the vicinity of an officially designated scenic highway. Further, the City's 2030 General Plan policies and the Design Guidelines would be effective in reducing the visual prominence and aesthetic impact of new development. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Finally, adherence to the Design Guidelines and Municipal Code would reduce the impacts of daytime glare and nighttime lighting by requiring the design to limit lighting leakage and glare.

Agriculture and Forestry Resources

The Department of Conservation identifies the Project Site as Grazing Land. According to the California Important Farmland Finder, there is currently no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the Project Site, nor within the Project vicinity. Additionally, none of the land within the Project Site or vicinity is under a Williamson Act contract. Finally, no identified forest lands exist on the Project Site or within the vicinity of the Project. As such, the Project would not have the potential to convert agricultural land or forest resources.

Geology and Soils

The Proposed Project Site is not located within an Alquist-Priolo Earthquake Zone. The Site is not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the Project Site. Compliance with National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Plan (SWPPP) requirements, as well as implementation of the General Plan Policies P1.2 and the California Building Code

(CBC), would ensure that soil erosion and related impacts would be less than significant. Finally, according to General Plan Figure SAF-2, the Project Site is located in an area that has a high potential for expansion. However, standard procedures used in the construction of concrete footings as required by the CBC and adherence General Plan Policy P1.2 requiring a site-specific geotechnical report, will reduce this potential impact to less than significant despite the shrink-swell potential identified for Project Site soils.

Hazards and Hazardous Materials

Project construction would involve the use of hazardous materials such as diesel fuel. The transport, storage, use, and disposal of such materials would be done in compliance with local, state, and federal regulation and in compliance with fuels and materials Best Management Practices to be established in the construction SWPPP that would be prepared for the Project and implemented during construction. Potential risks associated with the handling of fuels and other potentially hazardous materials during construction would be sufficiently addressed through such compliance and management and would not pose a substantial risk of exposure or significant environmental effects.

Hydrology and Water Quality

Oroville Municipal Code Section 15.88.060 *Standards for Grading, Excavation And Site Clearance* requires sedimentation and erosion control for all grading and site preparation activities. The Proposed Project would be required to prepare and comply with an approved SWPPP and Municipal Code Section 15.88.060. The Project would not use groundwater as a domestic water source. There are no creeks, streams or rivers on or near the Project Site. As such, siltation of on- or offsite waterways would not occur. Project compliance with General Plan policies and Section 16.16.130 of the Municipal Code would require stormwater facilities that would restrict stormwater flows from the Project Site. Federal Emergency Flood Management Agency flood hazard map 06007C0788E indicates that the entire Project Site is in unshaded Zone X. The Project Site is not located within a flood zone. According to Figure SAF-3 of the 2030 General Plan, the Project Site is within the inundation area of Lake Oroville and failure of the Oroville Dam could result in release of water held behind the dam, and inundation of much of the city and surrounding area. However, the California Department of Water Resources (DWR) is continually assessing Oroville Dam; the Oroville Dam is formally inspected multiple times each year by various entities. The dam is inspected twice a year by the California DWR's Division of Safety of Dams and annually by the Federal Energy Relicensing Commission Dam Safety Program. Therefore, an event such as the failure of Lake Oroville Dam has a low probability of occurring and is not considered to be a reasonably foreseeable event.

Land Use and Planning

The Project Site is located in the western area of the City. The only established residential community near the Project is a small subdivision located on the eastern boundary of the Project Site. The Project would be accommodated by existing roadways and would not require construction of new roadways that would preclude access to the surrounding area. As such, the Proposed Project would not physically divide an established community,

Mineral Resources

The Project site is not within a designated Mineral Resource Zone and would not have the potential to result in the loss of availability of valuable mineral resources.

Public Services

The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police, schools, and parks facilities.

Recreation

The Project would be subject to Conservation Element Policy P3.1 requiring the dedication of land, the payment of in-lieu fees, or both for parks and recreational facilities . Therefore, Project impacts relating to parks and recreational facilities would be less than significant.

Utilities and Service Systems

Water

The Project includes the future development of 172 single-family homes and is anticipated to have an average water demand of 402 gallons per day (gpd) per housing unit or 69,066 gpd for the Project as a whole. The 69,066 gpd for the Project calculates to approximately 25.2 million gallons per year or 77.34 Acre-Feet (AF) Per Year (AFY) of water use. According to the Reginal Water Quality Control Board (RWQCB), the Thermalito Water and Sewer District (TWSD) had a total demand of 2,295.75 AF of water in 2021. The addition of 77.34 AF from the Proposed Project would not result in an exceedance of the TWSD surface water supply of 8,200 AF. As such, there would be sufficient water supply available to adequately offset future water demands projected for the Proposed Project.

Storm Drainage

The Project's storm drain system is designed to control all site storm waters and not allow an increase of offsite storm water flow. As such, the Project would have a less than significant impact to storm drainage facilities. However, comments received during the public review of the IS provided further information regarding storm drainage in the vicinity of the Project. As such, this impact area is further discussed in this EIR.

Electric Power

Electricity is provided to the Project Site by Pacific Gas & Electric Company (PG&E). The electricity provider's ability to provide its services concurrently for each project is evaluated during the development review process. No new electric facilities will be required to provide electricity to the Project.

Wildfire

The Project Site is not in an area designated by the California Department of Forestry and Fire Protection (CAL FIRE) as a Fire Hazard Severity Zone. Furthermore, no Very High FHSZs are located nearby. Also, the

Project Site is not located in a State Responsibility Area (CAL FIRE 2022). The Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. No construction activities would impede the use of surrounding roadways in an emergency evacuation. The Project would have no impact in this area.

3.0.2 Environmental Baseline

Pursuant to the State CEQA Guidelines (Section 15125(a)), the environmental setting used to determine the impacts associated with the Project normally is based on the environmental conditions that existed in the Project Area at the time the NOP was published. However, the CEQA Guidelines (Section 15125(a)) also says that where existing conditions change or fluctuate over time, a lead agency may define existing conditions by referencing historic conditions, conditions expected when a project becomes operational, or projected future conditions beyond the date of initial project operations, if doing so would meet CEQA's objective of giving the public and decisionmakers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.

For purposes of this EIR, *environmental baseline* is generally defined as conditions that existed within the Project Study Area at the time of NOP circulation, or November 3, 2022. This provides the basis for the determination of the majority of Project impacts, i.e., the changes to those conditions brought about by Project construction and operation either directly or indirectly. When the environmental baseline is substantially different than described above, the specific conditions and assumptions relied on for the issue area are described.

3.0.3 Impact and Mitigation Measure Terminology

This DEIR analyzes the potential direct, indirect, and cumulative environmental impacts of the Proposed Project. The determination of whether an impact is considered significant is based on specific significance criteria. Under CEQA, these criteria (also called Thresholds of Significance) are used to make a determination of significance for each environmental impact evaluated. An adverse impact that exceeds the significance criteria is considered *significant*, and an impact that does not exceed the criteria is considered *less than significant*. The CEQA significance criteria used in this DEIR are based on CEQA's mandatory findings of significance (as summarized in State CEQA Guidelines Section 15065); the checklist presented in Appendix G of the State CEQA Guidelines in effect when the Draft EIR was prepared; and where appropriate, factual or scientific data and regulatory standards of federal, state, and local agencies. For CEQA purposes, impacts in this DEIR are classified as:

- *No Impact* – There would not be any change to the environment as a result of the project.
- *Less than Significant Impact* - A project impact is considered less than significant if it would not exceed the threshold of significance and therefore would not cause a substantial adverse change in the environment. No mitigation is required for a less than significant impact.
- *Less than Significant Impact with Mitigation* - A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the comparison of the project's effects to the established thresholds of

significance. Mitigation measures are identified, where feasible, to avoid, minimize, rectify, reduce, or compensate for significant impacts of the project, in accordance with the State CEQA Guidelines (Section 15126.4). If project impacts would be reduced to a less than significant level after the implementation of mitigation, the impact is classified as less than significant with mitigation.

- *Significant and Unavoidable Impact* - A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment and if that impact would remain significant even after the implementation of mitigation. A lead agency can approve a project with significant unavoidable impacts if the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse effects. In this case, the lead agency must adopt a statement of overriding considerations describing the specific reasons to support its action (State CEQA Guidelines Section 15093(b)).

3.0.4 Cumulative Impact Scenario

Section 15130(a) of the CEQA Guidelines requires a discussion of cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." The CEQA Guidelines, Section 15355, defines a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulatively considerable impacts are defined in Section 15065(a)(3) of the CEQA Guidelines as the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

Section 15130(b) of the CEQA Guidelines states:

> "[t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other project contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

To analyze the cumulative impacts of the Project in combination with other expected projects, the amount and location of development expected to occur must be predicted. Section 15130(b) of the CEQA Guidelines allows two methods of prediction:

"Either:

(A) A list of relevant past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect…"

Other than the Proposed Project, no other development is pending or proposed in the City or the surrounding area. Therefore, for the purpose of this DEIR, the Oroville 2030 General Plan (2015a) growth projections are the basis of the cumulative analysis.

The City of Oroville adopted the Oroville 2030 General Plan on June 2, 2009. As a part of the 2009 update process, an EIR was certified by the City (SCH #2008022024). Within this EIR were development projections to the year 2030. These projections are provided in Table 3-1.

Table 3-1. 2008 General Plan EIR - Expected 2030 Development Under the 2030 General Plan

Location	Residential (dwelling units)	Industrial (square feet)	Commercial (square feet)
City Limit (only)	9,300	6,800,000	12,200,000
Sphere of Influence (only)	18,300	1,900,000	9,000,000
Total:	**27,600**	**8,700,000**	**21,200,000**

Source: City of Oroville 2015b

In 2015, the City again updated the General Plan, in part to include some land use changes within the city limits. As a part of this process, the *Oroville Sustainability Update Draft Supplemental EIR* (SCH# 2014052001) was written and certified by the City in 2015. The Draft Supplemental EIR (Draft SEIR) also updated the expected growth in the City using the same methodology to estimate future development as used in the 2009 EIR. The 2015 Draft SEIR included changes to the 2030 development projections which resulted in increase to residential, industrial, and commercial development within the City limits as shown in Table 3-2. The 2030 development projections provide the basis for cumulative analysis in this DEIR.

Table 3-2. 2015 General Plan SEIR – Expected 2030 Development Under the 2030 General Plan

Location		Residential (dwelling units)	Industrial (square feet)	Commercial (square feet)
City Limit (only)	Change	+385	+226,000	-32,000
	New Total	9,685	7,026,000	12,168,000
Sphere of Influence (only)		18,300	1,900,000	9,000,000
Total:		**27,985**	**8,926,000**	**21,168,000**

Source: City of Oroville 2015b

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3.1 Air Quality

This section evaluates the Project-related effects to air quality. This section is based on the *Air Quality and Greenhouse Gas Emissions Assessment* prepared for the Project (ECORP 2023, Appendix 3.2). The information provided below is an abridged version of this report. This analysis was prepared using methodologies and assumptions recommended by the BCAQMD. Regional and local existing conditions are presented, along with pertinent standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutant emissions attributable to the Project and to determine the level of impact the Project would have on the environment and to provide feasible mitigation measures for these impacts.

3.1.1 Environmental Setting

The City of Oroville and the Project Site are within the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB consists of seven counties: Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet AMSL, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area (Sacramento Valley Air Quality Engineering and Enforcement Professionals [SVAQEEP] 2021).

The environmental conditions of Butte County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Butte County have also contributed to an increase in emissions.

3.1.2 Ambient Air Quality Standards

Air quality standards are set at both the federal and state levels of government. The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (USEPA) to establish ambient air quality standards for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). The California CAA also sets ambient air quality standards. The state standards are more stringent than the federal standards, and they include other pollutants in addition to those regulated by the federal standards. An area is considered to be in attainment of the standards when the concentrations of pollutants are below the maximum allowed standards in that area,. The Butte County portion of the NSVAB is designated as a nonattainment area for the federal O_3 standard and is also a nonattainment area for the state standards for O_3, PM_{10} and $PM_{2.5}$ and (California Air Resources Board [CARB] 2018, 2020).

3.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many types of TACs, with varying degrees of toxicity. 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. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Most recently, CARB identified Diesel Particulate Matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (i.e., heavy-duty, light-duty), engine operating conditions (i.e., idle, accelerate, decelerate), fuel formulations (i.e., high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

3.1.4 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site include residences directly adjacent to the northeast corner of the Project Site boundary, fronting 20th Street, approximately 75 feet distant.

3.1.5 Regulatory Framework

3.1.5.1 Federal

Clean Air Act

The CAA of 1970 and the CAA Amendments of 1971 required the USEPA to establish the National Ambient Air Quality Standards (NAAQS), with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 in Appendix 3.1 lists the federal attainment status of the SVAB for the criteria pollutants.

3.1.5.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California Ambient Air Quality Standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The CCAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the CalEPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions

standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. \CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The *2021 Triennial Air Quality Attainment Plan* constitutes the current SIP for the Butte County portion of the NSVAB. The plan is updated on a triennial basis and was last updated in 2021. It presents comprehensive strategies to reduce the O3 precursor pollutants (Reactive Organic Gas [ROG] and Oxides of Nitrogen [NO_x]) from stationary, area, mobile, and indirect sources.

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an Airborne Toxics Control Measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a Health Risk Assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by SB 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

3.1.5.3 Local

Butte County Air Quality Management District

The BCAQMD is the air pollution control agency for Butte County, including the Project Site. The agency's primary responsibility is ensuring that the federal and state ambient air quality standards are attained and maintained in the Butte County portion of the NSVAB. The BCAQMD, along with other air districts in the

NSVAB, has committed to jointly prepare and implement the NSVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin. The BCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities.

The BCAQMD has adopted a number of rules and regulations to implement its air quality plans, including permitting, prohibitions and limits to emissions from a variety of stationary resources, regulation of open burning, regulation of toxic air contaminants, and implementation of CAA requirements. The following is a list of noteworthy rules that are required of construction activities associated with the Proposed Project:

- *Rule 400: Permit Requirements*. The purpose of this rule is to require any person constructing, altering, or operating a source that emits or may emit air contaminants to request an Authority to Construct or Permit to Operate from the Air Pollution Control Officer and to provide an orderly procedure for application, review, and authorization of new sources and of the modification and operation of existing sources of air pollution. Stationary sources that are subject to Rule 1101-Title V-Federal Operating Permits of these Rules and Regulations shall also comply with the procedures specified in this Rule.
- *Rule 402: Nuisance*. No person shall discharge from any non-vehicular source such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- *Rule 205: Fugitive Dust*. The purpose of this RULE is to reduce ambient concentrations and limit fugitive emissions of fine particulate matter (PM_{10}) from construction activities, bulk material handling and storage, carryout and track-out, and similar activities, weed abatement activities, unpaved parking lots, unpaved staging areas, unpaved roads, inactive disturbed land, disturbed open areas, and windblown dust.
- *Rule 230: Architectural Coatings*. The purpose of this rule is to limit the emissions of volatile organic compounds from the use of architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the district.

3.1.6 Environmental Impacts

3.1.6.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) 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).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

Butte County Air Quality Management District Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (BCAQMD) may be relied upon to make the above determinations. According to the BCAQMD, an air quality impact is considered significant if the proposed Project contributes substantially to an existing or projected air quality violation or exposes sensitive receptors to substantial pollutant concentrations. The BCAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 3.1-1.

Table 3.1-1. BCAQMD Regional Significance Thresholds

Air Pollutant	Construction Activities		Operations
	Pounds per Day	Tons per Year	Pounds per day
Reactive Organic Gas	137	4.5	25
Carbon Monoxide	-	-	-
Nitrogen Oxide	137	4.5	25
Sulfur Oxide	-	-	-
Coarse Particulate Matter (PM_{10})	80	-	80
Fine Particulate Matter ($PM_{2.5}$)	-	-	-

Source: BCAQMD 2014

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

3.1.6.2 Methods of Analysis

Air quality impacts were assessed in accordance with methodologies recommended by the BCAQMD. Where criteria air pollutant quantification was required, emissions were modeled using CalEEMod, version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Butte County. Operational air pollutant emissions were based on the Project Site Plans and traffic trip generation rates from KD Anderson & Associates, Inc. (2023).

3.1.6.3 Project Impacts and Mitigation Measures

Impact AIR-1:	Air pollutant emissions associated with the Proposed Project could conflict with or obstruct the applicable air quality plan.
Impact Determination	No impact.
Threshold	*Conflict with or obstruct implementation of the applicable air quality plan.*

Impact Discussion

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain 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. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The *2021 Triennial Air Quality Attainment Plan* constitutes the current SIP for the Butte County portion of the NSVAB and is the most recent air quality planning document covering Butte County. Air quality attainment plans are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. State law makes CARB the lead agency for all purposes related to the Air Quality Attainment Plan. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The 2021 Triennial Air Quality Attainment Plan includes forecast ROG and NO_X emissions (O_3 precursors) for the entire NSVAB through the year 2020. The plan also includes control strategies necessary to attain the California O_3 standard at the earliest practicable date, as well as

developed emissions inventories and associated emissions projections for the region showing a downtrend for both ROG and NO_X.

The consistency of the Project with the *2021 Triennial Air Quality Attainment Plan* is determined by Project-induced development's consistency with air pollutant emission projections in the plan. However, although the *2021 Triennial Air Quality Attainment Plan* provides estimated ROG and NO_x emissions for the entire NSVAB, they are not apportioned by local air district, county or municipality. The *2021 Triennial Air Quality Attainment Plan* is based on information derived from projected growth in Butte County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Therefore, until such time as Butte County's applicable air quality plan provides the locally appropriate data necessary to evaluate the consistency of a project's potential air quality impacts (due to non-stationary sources) with the attainment plan's emission projections, the BCAQMD recommends that lead agencies and applicants evaluate a project's contribution to changes in population growth in relation to those projections made by the Butte County Association of Governments (BCAG, BCAQMD 2014).

BCAG has prepared the Butte County population and housing forecasts using professionally accepted methodologies for long-range forecasting. Utilizing a *top down* approach, long-term projections prepared by the California Department of Finance (DOF) were consulted for Butte County and used by BCAG to re-establish control totals for the region. Additionally, a variety of data sources, including input from local jurisdictions, were reviewed and inserted at the local jurisdiction level, therefore incorporating a *bottom up* approach. Adjustments were made to compensate for the redistribution and repopulation of the Camp Fire burn area (BCAG 2018). As such, projects that propose development consistent with the growth anticipated by BCAG would be consistent with the *2021 Triennial Air Quality Attainment Plan*.

According to the California DOF, the City currently contains a population of 18,863 people and a housing inventory of 7,783 houses (DOF 2022). Accounting for a home vacancy rate of 7.1 percent in Oroville, the DOF (2022) estimates an average of 2.49 people living within an occupied residence. The Proposed Project would create an additional 172 single-family lots, which could be expected to accommodate 428 people (2.49 x 172 = 428), thereby increasing the City of Oroville population to 19,291 (this estimate conservatively assumes that all future residents at the Project would be new to Oroville) and housing stock to 7,955 units. BCAG projects the population of Oroville to range from 20,757 to 22,283 people in the year 2025, and the housing inventory to range from 7,841 to 8,301 units. Thus, the expected growth in population and housing as a result of the Proposed Project would not surpass BCAG's projections and therefore would not result in a conflict with the *2021 Triennial Air Quality Attainment Plan*. Additionally, as shown in Tables 2-5 and 2-6 of the *2021 Triennial Air Quality Attainment Plan*, all Project emissions would be under the BCAQMD significance thresholds, which were established to for reducing air pollution and related health effects, a primary goal of the *2021 Triennial Air Quality Attainment Plan*. It is further noted that according to Chapter Five of the Oroville Housing Element, Goal 3: Facilitate Development of New Housing to Meet the Needs of the Community, the City will maintain a goal to facilitate development of a range of housing that varies sufficiently in terms of cost, design, size, location, and tenure to meet the housing needs of all economic segments of the community at a level which can be supported by the utility, water, and street infrastructure. Thus, the Project complies with the anticipated housing needs in

Oroville and supports the goals of the General Plan. For these reasons, the Project would be consistent with the goals of local air quality planning.

Mitigation Measures

No mitigation measures are required.

Impact AIR-2:	Project implementation could result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is non-attainment under an applicable federal or state ambient are quality standard.
Impact Determination:	Less Than Significant
Threshold:	*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).*

Impact Discussion

Project Construction-Generated Criteria Air Quality Emissions

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Attachment A provides more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 3.1-2 Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the BCAQMD's thresholds of significance.

Table 3.1-2. Construction-Related Emissions

Construction Year	Pollutant					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Daily (pounds per day)						
Construction Year One	3.75	36.0	34.2	0.1	9.4	5.4
Construction Year Two	5.40	19.7	30.2	0.0	1.6	0.9
Construction Year Three	5.28	18.7	29.7	0.0	1.5	0.9
Construction Year Four	5.20	17.9	29.3	0.0	1.4	0.8
BCAQMD Significance Threshold	*137 pounds/day*	*137 pounds/day*	-	-	*80 pounds/day*	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Annual (tons per year)						
Construction Year One	0.2	2.3	2.1	0.0	0.3	0.2
Construction Year Two	0.7	2.6	3.8	0.0	0.2	0.1
Construction Year Three	0.7	2.4	3.7	0.0	0.2	0.1
Construction Year Four	0.6	2.1	3.2	0.0	0.2	0.1
BCAQMD Significance Threshold	*4.5*	*4.5*	-	-	-	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of BCAQMD Rule 205. The specific Rule 205 measures applied in CalEEMod include sweeping/cleaning adjacent roadway access areas daily, water exposed surfaces twice daily. Emissions taken of the season, summer or winter, with the highest outputs. Building construction, paving, and painting assumed to occur simultaneously.

As shown in Table 3.1-2, emissions generated during Project construction would not exceed the BCAQMD's daily or annual thresholds of significance.

Project Operations Criteria Air Quality Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10} and O_3 precursors such as ROG and NO_X. Operational-generated emissions associated with the Proposed Project were calculated using CalEEMod. Predicted maximum annual operational-generated emissions of criteria air pollutants for the Proposed Project are summarized in Table 3.1-3.

Table 3.1-3. Operational-Related Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	8.6	0.1	9.8	0.0	0.0	0.0
Energy	0.0	0.7	0.3	0.0	0.1	0.1
Mobile	6.7	1.5	10.1	0.0	0.0	0.0
Total:	**15.3**	**2.3**	**20.2**	**0.0**	**3.8**	**0.1**
BCAQMD Significance Threshold	*25 pounds/day*	*25 pounds/day*	-	-	*80 pounds/day*	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	7.8	-	-	-	-	-
Energy	0.0	0.7	0.3	0.0	0.1	0.1
Mobile	5.5	1.7	15.1	0.0	0.0	0.1
Total:	**13.3**	**2.4**	**15.4**	**0.0**	**0.1**	**0.2**
BCAQMD Significance Threshold	*25 pounds/day*	*25 pounds/day*	-	-	*80 pounds/day*	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Emission projections predominately based on CalEEMod model defaults for Butte County. Average daily vehicle trips provided by KD Anderson & Associates, Inc. (2023).
Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

As shown in Table 3.1-3, daily emissions associated with Project operations would not exceed the BCAQMD significance thresholds.

Mitigation Measures

No mitigation measures are required.

Impact AIR-3:	Construction and/or operation of the Proposed Project could expose sensitive receptors to substantial pollutant concentrations.
Impact Determination:	Less than Significant.
Threshold:	*Exposure of sensitive receptors to substantial pollutant concentrations.*

Impact Discussion

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site include residences directly adjacent to the northeast corner of the Project Site boundary, fronting 20th Street, approximately 75 feet distant.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of DPM, ROG, NO_x, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The Butte County portion of the NSVAB is listed as a nonattainment area for the federal O_3 standard and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$. Thus, existing O_3, PM_{10} and $PM_{2.5}$ levels in the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 3.1-2 the Project would not exceed the BCAQMD significance thresholds for construction emissions.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_x) in excess of the BCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in excess of the BCAQMD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the BCAQMD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxins. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.1 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the Sacramento County portion of the SVAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 Parts Per Million (ppm) or the 8-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of Southern

California. The SCAQMD conducted a CO hot spot analysis as part of the *1992 CO Federal Attainment Plan* at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest 1-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest 8-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other air districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix in order to generate a significant CO impact.

The Proposed Project is anticipated to result in 1,622 daily traffic trips (KD Anderson & Associates, Inc. 2023). Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Mitigation Measures

No mitigation measures are required.

Impact AIR-4:	Project implementation could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
Impact Determination:	Less than Significant.
Threshold	*Result in the release of other emissions (such as those leading to odors) adversely affecting a substantial number of people).*

Impact Discussion

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word *strong* to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

According to the BCAQMD, land uses commonly considered to be potential sources of obnoxious odorous emissions include wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. The Proposed Project does not include any uses identified by the BCAQMD as being associated with odors.

Mitigation Measures

No mitigation measures are required.

3.1.7 Cumulative Impacts

Impact AIR-5:	Would implementation of the Proposed Project, in combination with existing, approved, proposed, and reasonably foreseeable development in Butte County, result in a cumulatively considerable air quality impact?
Impact Determination:	Less Than Cumulatively Considerable
Threshold	*Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative impacts to air quality?*

Impact Discussion

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable. As identified in the analysis above, the Project would not exceed significance thresholds or otherwise result in any project-level impact. Thus, the Project is considered less than cumulatively considerable in terms of air quality-related impacts.

Mitigation Measures

No mitigation measures are required.

3.2 Biological Resources

This section presents an evaluation of potential biological resources impacts associated with the Project. The section assesses whether construction and operation of the Project would result in significant impacts on terrestrial and aquatic biological resources. The City received one letter concerning biological resources as a part of the NOP for this DEIR. However, this letter, from the California Department of Fish and Wildlife (CDFW), did not include any specific comments about the Project Site, Proposed Project, or the biological analysis provided in the IS. This letter is included in Appendix 1.0-A.2.

This section includes a description of the existing environmental conditions, regulatory setting, an overview of the methods used for assessing impact, impact significance thresholds, and the impacts associated with constructing and operating each of the three Project Alternatives. Where significant impacts are identified, feasible and effective mitigation measures are presented to reduce those impacts to levels considered less than significant.

Resource information presented herein is based on the following technical studies:

- *Biological Resources Assessment for the Feather Ranch Project* (BRA) (ECORP 2023, Appendix 3.2-A);
- *The 20th Street Residential Development Jurisdictional Waters and Wetlands Delineation* (Rincon Consultants, Inc. 2021, Appendix 3.2-B).

Note the Project is located within APN 030-230-098-000. For the BRA, the Study Area was defined as the limits of this APN. The Study Area and Project Site represent the same area and are interchangeable in this section of the DEIR.

3.2.1 Environmental Setting

3.2.1.1 Site Characteristics and Land Use

The Study Area is located within gently rolling terrain situated at an elevational range of approximately 190 to 230 feet AMSL in the Sacramento Valley District of the California floristic province. The average winter low temperature in the vicinity of the Study Area is 39.4 degrees Fahrenheit (˚F) and the average summer high temperature is 92.2˚F; average annual precipitation is approximately 31.52 inches (National Oceanic and Atmospheric Administration [NOAA] 2022a).

The Study Area is currently undeveloped and idle rangeland. The vegetation community is a mixture of native and nonnative herbaceous plants. There are no trees or shrubs present. There are no perimeter fences, so this site is not used for livestock grazing but may have been in the past. Undeveloped dirt roads and a disced fire-break path surround the Study Area.

The surrounding lands include residential development to the east, rural residences to the north and south, and undeveloped rangeland to the west.

3.2.2 Biological Setting

3.2.2.1 Soils

According to the National Resources Conservation Soil Service Web Soil Survey (2022), one soil unit, or type, has been mapped within the Study Area, (603) Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes This soil unit is composed of Oroville, gravelly fine sandy loam, and similar soils (30 percent), Thermalito, sandy loam, and similar soils (25 percent), Fernandez, sandy loam, and similar soils (15 percent), Thompsonflat, fine sandy loam, and similar soils (15 percent), and minor components (15 percent). The Oroville series consists of moderately deep, poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are in swales on intermediate terraces. The Thermalito series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on mounds on intermediate terraces. The Thompsonflat series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate and high terraces. The Fernandez series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate terraces. This soil unit is not derived from serpentinite or other ultramafic parent materials.

Vegetation Communities and Land Cover Types

The entire Study Area is comprised of nonnative annual grassland with scattered isolated seasonal wetland/vernal pool basin. The developed-disturbed land cover type found onsite consists of dirt roads and areas of repeated off-road vehicle use. These areas are largely denuded of any vegetation.

Nonnative Annual Grassland

The majority of the Study Area is comprised of nonnative annual grassland. This community is dominated by a variety of nonnative species such as medusahead grass (*Elymus caput-medusae*), wild oats (*Avena fatua*), Italian ryegrass (*Festuca perennis*), and filaree (*Erodium* sp.). This vegetation community onsite is not specifically classified in *A Manual of California Vegetation* (Sawyer et al. 2009) but is similar to some *Herbaceous Semi-Natural* alliances.

Seasonal Wetland/Vernal Pool

The seasonal wetlands/vernal pools are scattered throughout the Study Area in topographic depressions in the rolling terrain. These depressions collect seasonal runoff and direct rainfall during the wet season and remain inundated or saturated long enough during the growing season to support wetland vegetation, hydric soil, and wetland hydrology. Dominant plant species found in these wetland depressions include slender popcorn flower (*Plagiobothrys stipitatus*), toad rush (*Juncus bufonius*), smooth goldfields (*Lasthenia glaberrima*), and water-starwort (*Callitriche marginata*). This vegetation community onsite is not specifically classified in *A Manual of California Vegetation*. These wetlands are discussed in further detail in the Aquatic Resources section.

3.2.2.2 Aquatic Resources

Rincon Consultants, Inc. prepared the Jurisdictional Waters and Wetlands Delineation for the Study Area dated March 2021. As shown in Figure 3.2-1, Rincon delineated 78 depressional seasonal wetlands totaling 2.62 acres, as listed in Table 3.2-1.

Table 3.2-1. RWQCB Jurisdictional Area

Feature	RWQCB Jurisdiction Wetland Acres	Feature	RWQCB Jurisdiction Wetland Acres	Feature	RWQCB Jurisdiction Wetland Acres
SW1	0.371	SW 27	0.011	SW 53	0.021
SW 2	0.014	SW 28	0.017	SW 54	0.022
SW 3	0.020	SW 29	0.084	SW 55	0.035
SW 4	0.020	SW 30	0.067	SW 56	0.015
SW 5	0.033	SW 31	0.021	SW 57	0.029
SW 6	0.013	SW 32	0.012	SW 58	0.007
SW 7	0.009	SW 33	0.039	SW 59	0.018
SW 8	0.010	SW 34	0.011	SW 60	0.048
SW 9	0.015	SW 35	0.015	SW 61	0.014
SW 10	0.003	SW 36	0.015	SW 62	0.006
SW 11	0.014	SW 37	0.019	SW 63	0.017
SW 12	0.020	SW 38	0.005	SW 64	0.006
SW 13	0.020	SW 39	0.006	SW 65	0.089
SW 14	0.134	SW 40	0.019	SW 66	0.030
SW 15	0.371	SW 41	0.016	SW 67	0.011
SW 16	0.021	SW 42	0.015	SW 68	0.010
SW 17	0.013	SW 43	0.011	SW 69	0.029
SW 18	0.011	SW 44	0.031	SW 70	0.012
SW 19	0.134	SW 45	0.009	SW 71	0.015

Table 3.2-1. RWQCB Jurisdictional Area

Feature	RWQCB Jurisdiction Wetland Acres	Feature	RWQCB Jurisdiction Wetland Acres	Feature	RWQCB Jurisdiction Wetland Acres
SW 20	0.090	SW 46	0.016	SW 72	0.043
SW 21	0.034	SW 47	0.015	SW 73	0.020
SW 22	0.014	SW 48	0.018	SW 74	0.029
SW 23	0.004	SW 49	0.008	SW 75	0.035
SW 24	0.030	SW 50	0.010	SW 76	0.013
SW 25	0.062	SW 51	0.013	SW 77	0.010
SW 26	0.031	SW 52	0.016	SW 78	0.002
			Seasonal Wetlands Total	**2.62 acres**	

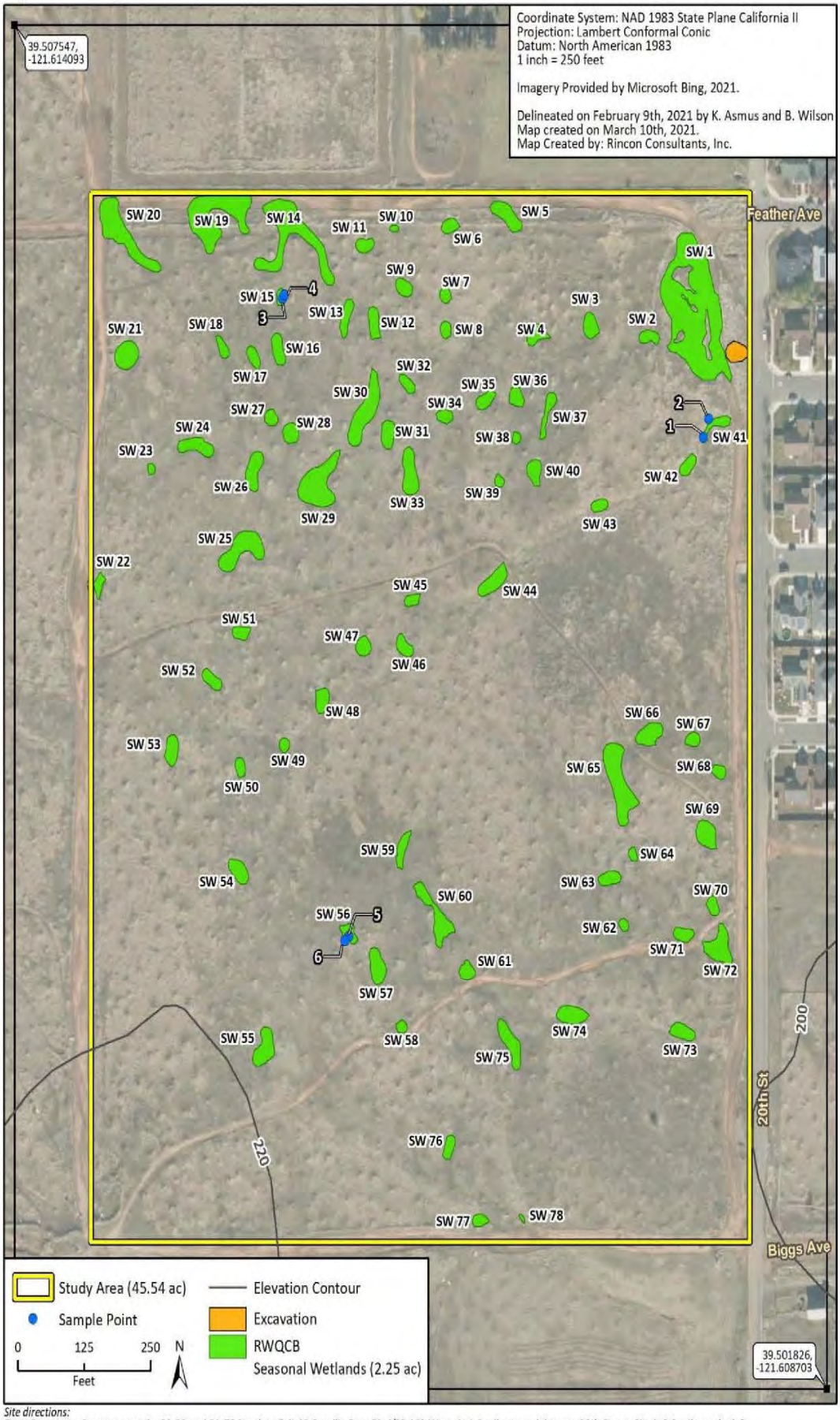
Source: Rincon Consultants, Inc. 2021

These wetlands were categorized as seasonal wetlands by Rincon but some could be considered vernal pools by other wetland delineators. The USEPA defines vernal pools as "seasonal depressional wetlands that occur under Mediterranean climate conditions of the West Coast and in glaciated areas of the northeastern and midwestern states. They are covered by shallow water for variable periods from winter to spring but may be completely dry for most of the summer and fall" (USEPA 2022).

At present, there has been no verification or jurisdictional determination of these aquatic resources conducted by the United States Army Corps of Engineers (USACE).

When Rincon prepared the delineation report, the definition of Waters of the U.S. was based on the National Wetlands Protection Rule (NWPR). Under the NWPR, the wetlands onsite would probably not have been considered Waters of the U.S. as stated in the Rincon report. However, the NWPR was vacated and remanded in August 2021. In the current definition of Waters of the U.S. according to the pre-2015 regulatory regime, include the *Rapanos* Guidance, wetlands adjacent to nonnavigable tributaries that are not relatively permanent would require a significant nexus evaluation to establish federal jurisdiction. The wetlands onsite would require a significant nexus evaluation by the USACE in order to determine jurisdiction.

Regardless of federal jurisdiction, the wetlands delineated onsite would likely be considered Waters of the State under the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019).



Site directions:
From Downtown Sacramento take CA-99 and CA-70 North to Exit 46 Oroville Dam Blvd/SR 162 West. At 1.9 miles turn right onto 20th Street. Site is 0.3 mile on the left.

Source: Rincon Consultants, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.2-1. Aquatic Resources Delineation Map

3.2.2.3 Wildlife Observations

ECORP biologist Keith Kwan conducted a reconnaissance-level field survey for the Study Area on March 1, 2022. Wildlife observed within or flying over the Study Area by during the site reconnaissance includes mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), savannah sparrow (*Passerculus sandwichensis*), Brewer's blackbird (*Euphagus cyanocephalus*), and western meadowlark (*Sturnella neglecta*).

3.2.3 Evaluation of Special-Status Species Identified in the Literature Search

The BRA competed for the Project listed all the special-status plant and wildlife species identified in the literature review as potentially occurring within the vicinity of the Study Area. Included in this table are the listing status for each species, a brief habitat description, and an evaluation on the potential for each species to occur within the Study Area. Of these special-status species, 23 plants, three invertebrates, one amphibian, one reptile, and five birds have potential habitat in the Study Area. A list of special-status species potentially affected by the Proposed Project, their general habitat requirements, and an assessment of their potential to occur within the Study Area is provided in Table 3.2-2. A complete list of special-status species known to exist in the region and the results of the database queries are included in Appendix 3.2-A.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Henderson's bent grass *(Agrostis hendersonii)*	–	–	3.2	Vernal pools and mesic areas in valley and foothill grasslands (230'–1,000').	April–June	Potential – there is suitable habitat onsite.
Depauperate milk-vetch (*Astragalus pauperculus*)	-	-	4.3	Occurs within vernally mesic and volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands (195'-3,985')	March-June	Low Potential – There is marginally suitable habitat onsite.
Big-scale balsamroot *(Balsamorhiza macrolepis)*	–	–	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils (150'–5,100').	March–June	Potential – there is suitable habitat onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*)	–	–	4.2	Occurs in old alluvial terraces and silt, qsandy, or gravelly soils in vernal pools and swales within valley and foothill grassland (35'–1,100').	April–May	Potential – there is suitable habitat onsite.
Butte County calycadenia *Calycadenia oppositifolia*)	-	-	4.2	Occurs on volcanic, granitic, and serpentinite areas of chaparral, cismontane woodland, lower montane coniferous forest, meadows, seeps and valley and foothill grassland. (295'-3,100')	April - July	Low Potential – There is marginally suitable habitat onsite.
Pink creamsacs *(Castilleja rubicundula* var. *rubicundula)*	–	–	1B.2	Serpentinite substrates in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland (65'–2,985').	April–June	Low Potential – There is marginally suitable habitat onsite.
Recurved larkspur *(Delphinium recurvatum)*	–	–	1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grasslands (10'–2,592').	March–June	Potential – there is suitable habitat onsite.
Hoover's spurge (*Euphorbia hooveri*)	FT	–	1B.2	Vernal pools (80'–820').	July–September	Potential – there is suitable habitat onsite.
Hogwallow starfish *(Hesperevax caulescens)*	–	–	4.2	Sometimes alkaline in mesic areas with clay soil within valley and foothill grassland and shallow vernal pools (0'–1,655').	March–June	Potential – there is suitable habitat onsite.
Ahart's dwarf rush *(Juncus leiospermus* var. *ahartii)*	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (U.S. Fish and Wildlife	March–May	Potential – there is suitable habitat onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				Service [USFWS] 2005) (98'–751').		
Red Bluff dwarf rush *(Juncus leiospermus* var. *leiospermus)*	–	–	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools (115'–4,101').	March–June	Potential – there is suitable habitat onsite.
Colusa layia *(Layia septentrionalis)*	–	–	1B.2	Sandy or serpentinite soils in chaparral, cismontane woodland, and valley and foothill grasslands (328'–3,593').	April–May	Potential – there is suitable habitat onsite.
Bristly leptosiphon (*Leptosiphon acicularis*)	–	–	4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland (180'–4,920').	April–July	Potential – there is suitable habitat onsite.
Serpentine leptosiphon (*Leptosiphon ambiguus*)	–	–	4.2	Usually serpentinite soils of Cismontane woodland, coastal scrub, and valley and foothill grassland (395'–3710').	March–June	Low Potential – There is marginally suitable habitat onsite.
Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*)	FE	CE	1B.1	Mesic valley and foothill grassland and vernal pools (150'–3,052').	March–May	Potential – there is suitable habitat onsite.
Woolly meadowfoam *(Limnanthes floccosa* ssp. *floccosa)*	–	–	4.2	Vernally mesic chaparral, cismontane woodland, valley and foothill grassland, and vernal pools(197'–4,380').	March–May	Potential – there is suitable habitat onsite.
Sylvan microseris *(Microseris sylvatica)*	–	–	4.2	Chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, valley and foothill	March-June	Potential – there is suitable habitat onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				grassland; serpentinite (rarely) (150'-4,920')		
Veiny monardella *(Monardella venosa)*	–	–	1B.1	Heavy clay soils in cismontane woodland and valley and foothill grasslands (197'–1,345').	May–July	Low Potential – there is marginally suitable habitat onsite.
Tehama navarretia (*Navarretia heterandra*)	–	–	4.3	Mesic areas in valley and foothill grassland and vernal pools(98'–3,314').	April–June	Potential – there is suitable habitat onsite.
Slender Orcutt grass *(Orcuttia tenuis)*	FT	CE	1B.1	Vernal pools, often gravelly (115'–5,774').	May–September	Potential – there is suitable habitat onsite.
Ahart's paronychia (*Paronychia ahartii*)	–	–	1B.1	Well-drained rocky outcrops, often vernal pool edges, and volcanic upland (Hartman and Rabeler 2012) of cismontane woodland, valley and foothill grassland, and vernal pools (98'–1673').	February–June	Potential – there is suitable habitat onsite.
Butte County golden clover (*Trifolium jokerstii*)	-	-	1B.2	Mesic valley and foothill grassland and vernal pools (164'-1,575')	March–May	Potential – there is suitable habitat onsite.
Greene's tuctoria *(Tuctoria greenei)*	FE	CR	1B.1	Vernal pools (98'–3,510').	May–July	Potential – there is suitable habitat onsite.
Invertebrates						
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	-	-	Vernal pools/wetlands.	November-April	Potential-Suitable habitat present onsite.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	-	Vernal pools/wetlands.	November-April	Potential-Suitable habitat present onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	-	-	Vernal pools/wetlands.	November-April	Potential-Suitable habitat present onsite.
Amphibians						
Western spadefoot (*Spea hammondii*)	-	-	SSC	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March-May	Potential-Suitable habitat is present onsite.
Reptiles						
Blainville's ("Coast") horned lizard (*Phrynosoma blainvillii*)	-	-	SSC	Formerly a wide-spread horned lizard found in a wide variety of habitats, often in lower elevation areas with sandy washes and scattered low bushes. Also occurs in Sierra Nevada foothills. Requires open areas for basking, but with bushes or grass clumps for cover, patches of loamy soil or sand for burrowing and an abundance of ants (Stebbins and McGinnis 2012).	Apr-Oct	Potential-There is suitable habitat onsite.
Birds						
Northern harrier (*Circus hudsonius*)	-	-	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian	April-September	Low Potential-There is marginal nesting habitat onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				woodland communities.		
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures	March-August	Potential-There is suitable foraging habitat, but no nesting habitat onsite.
Burrowing owl *(Athene cunicularia)*	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Potential-There is suitable habitat.
Loggerhead shrike (*Lanius ludovicianus*)	-	-	SSC	Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.	March-July	Potential-There is suitable habitat.
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta	March-August	Potential-There is suitable foraging habitat, but no nesting habitat onsite.

Table 3.2-2. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
				counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck, and fava bean fields.		

Source: ECORP 2022

Status Codes:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
FC	Candidate for FESA listing as Threatened or Endangered.
BCC	USFWS Bird of Conservation Concern
CR	CESA- or NPPA-listed, Rare.
CE	CESA or NPPA listed, Endangered.
CT	CESA- or NPPA-listed, Threatened.
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians).
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern (CDFW, updated July 2017).
1B	CRPR/Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
3	CRPR/Plants About Which More Information is Needed – A Review List.
4	CRPR/Plants of Limited Distribution – A Watch List.
0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted (delisted species are monitored for 5 years).

3.2.4 Plants

A total of 60 special-status plant species were identified as having the potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). Of those, 37 species were determined to be absent from the Study Area due to the lack of suitable habitat or due to the Study Area being outside of the known elevational range for the species. No further discussion of those species is provided in this assessment. A brief description of the remaining 23 species that have the potential or low potential to occur within the Study Area is presented below.

3.2.4.1 Henderson's Bent Grass

Henderson's bent grass (*Agrostis hendersonii*) is not listed pursuant to either the federal or California ESAs but is designated as a California Rare Plant Rank (CRPR) 3.2 species. This species is an herbaceous annual that occurs in vernal pools and in mesic areas in valley and foothill grasslands. Henderson's bent grass blooms from April through June and is known to occur at elevations between 230 to 1,000 feet AMSL. The current range of this species in California includes Butte, Calaveras, Merced, Napa, Shasta, Tehama, and Tuolumne counties; occurrence in Butte County confirmed, but possible extirpated.

There are no California Natural Diversity Database (CNDDB) occurrences of Henderson's bent grass within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Henderson's bent grass has potential to occur within the Study Area.

3.2.4.2 Depauperate Milk-Vetch

Depauperate milk-vetch (*Astragalus pauperculus*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.3 species. This species is an herbaceous annual that occurs within vernally mesic and volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands. The blooming period for this species is from March through June and is known to occur at elevations 195 to 3,985 feet AMSL. Depauperate milk-vetch is endemic to California; its current range includes Butte, Shasta, and Tehama counties.

There are no CNDDB occurrences of depauperate milk-vetch. The nonnative annual grassland within the Study Area may provide marginally suitable habitat for this species. Depauperate milk-vetch has low potential to occur within the Study Area.

3.2.4.3 Big-Scale Balsamroot

Big-scale balsamroot (*Balsamorhiza macrolepis*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is an herbaceous perennial that occurs in chaparral, cismontane woodlands, valley and foothill grassland, and sometimes on serpentinite soils. Big-scale balsamroot blooms from March through June and is known to occur at elevations ranging from 150 to 5,100 feet AMSL. Big-scale balsamroot is endemic to California; the current range of this species includes Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne counties.

There are no CNDDB occurrences of big-scale balsamroot within 5 miles of the Study Area. The nonnative annual grassland within the Study Area may provide suitable habitat for this species. Big-scale balsamroot has potential to occur within the Study Area.

3.2.4.4 Valley Brodiaea

Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.2 species. This species is a bulbiferous perennial herb that occurs in old alluvial terraces and silty, sandy, or gravelly soils in vernal pools, swales, and valley and foothill grassland. Valley brodiaea blooms from April through May (sometimes June) and is known to occur at elevations ranging from 35 to 1,100 feet AMSL. Valley brodiaea is endemic to California; the current range of this species includes Butte, Calaveras, Nevada, Placer, Sacramento, San Joaquin, Sutter, and Yuba counties.

There are no CNDDB occurrences of Valley brodiaea. However, the seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Valley brodiaea has potential to occur within the Study Area.

3.2.4.5 Butte County Calycadenia

Butte County calycadenia (*Calycadenia oppositifolia*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs on volcanic, granitic, and serpentinite areas of chaparral, cismontane woodland, lower montane coniferous forest, meadows, seeps, and valley and foothill grassland. Butte County calycadenia blooms from April through July and is known to occur at elevations ranging from 295 to 3,100 feet AMSL. This species is endemic to California; the current range includes Butte County.

There are no CNDDB occurrences of Butte County calycadenia. However, the nonnative annual grassland within the Study Area may provide marginally suitable habitat for this species. Butte County calycadenia has low potential to occur within the Study Area.

3.2.4.6 Pink Creamsacs

Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a hemiparasitic herbaceous annual that occurs in serpentinite substrates in chaparral (openings), cismontane woodland, meadows and seeps, and valley and foothill grassland. Pink creamsacs blooms from April through June and is known to occur at elevations ranging from 65 to 2,985 feet AMSL. Pink creamsacs is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Napa, Santa Clara, Shasta, and Yolo counties.

There is one CNDDB occurrence of pink creamsacs within 5 miles of the Study Area. The nonnative annual grassland within the Study Area may provide marginally suitable habitat for this species. Pink creamsacs has low potential to occur within the Study Area.

3.2.4.7 Recurved Larkspur

Recurved larkspur (*Delphinium recurvatum*) is not listed pursuant to either the federal or California ESAs, but is designated a CRPR 1B.2 species. This species is an herbaceous perennial that occurs in alkaline substrates in chenopod scrub, cismontane woodland, and valley and foothill grasslands. Recurved larkspur blooms from March through June and is known to occur at elevations ranging from 10 to 2,592 feet AMSL. Recurved larkspur is endemic to California; the current range of this species includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Solano, Sutter, and Tulare counties. The species is presumed extirpated from Butte and Colusa counties.

There are no CNDDB occurrences of recurved larkspur within 5 miles of the Study Area. The nonnative annual grassland within the Study Area may provide suitable habitat for this species. Recurved larkspur has potential to occur within the Study Area.

3.2.4.8 Hoover's Spurge

Hoover's spurge (*Euphorbia hooveri)* is listed as threatened pursuant to the federal ESA, not listed as rare pursuant to the California ESA, and is also designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in vernal pools. Hoover's spurge blooms from July through September and is known to occur at elevations ranging from 80 to 820 feet AMSL. Hoover's spurge is endemic to California; its current range includes Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties.

There are no CNDDB occurrences of Hoover's spurge within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Hoover's spurge has potential to occur within the Study Area.

3.2.4.9 Hogwallow Starfish

Hogwallow starfish (*Hesperevax caulescens*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in mesic, clay areas within valley and foothill grassland and shallow vernal pools, sometimes in alkaline areas. Hogwallow starfish blooms from March through June and is known to occur from 0 to 1,655 feet AMSL. Hogwallow starfish is endemic to California; the current range of this species includes Alameda, Amador, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Mariposa, Merced, Monterey, Sacramento, San Diego, San Joaquin, San Luis Obispo, Solano, Sonoma, Stanislaus, Sutter, Tehama, Tuolumne, Yolo, and Yuba counties; however, it is presumed extirpated in San Diego County.

There are no CNDDB occurrences of hogwallow starfish within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Hogwallow starfish has potential to occur within the Study Area.

3.2.4.10 Ahart's Dwarf Rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in mesic areas in valley and foothill grasslands. This species also appears to have an affinity for slight disturbance since it has been found on farmed fields and gopher turnings (USFWS 2005). Ahart's dwarf rush blooms from March through May and is known to occur at elevations ranging from 98 to 751 feet AMSL (USFWS 2005). Ahart's dwarf rush is endemic to California; the current range of this species includes Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties.

There are two CNDDB occurrences of Ahart's dwarf rush within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Ahart's dwarf rush has potential to occur within the Study Area.

3.2.4.11 Red Bluff Dwarf Rush

Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in vernally mesic areas in chaparral, cismontane woodland, meadows, seeps, valley and foothill grasslands, and vernal pools. Red Bluff dwarf rush blooms from March through June and is known to occur at elevations ranging from 115 to 4,101 feet AMSL. Red Bluff dwarf rush is endemic to California; the current range of this species includes Butte, Placer, Shasta, and Tehama counties.

There is one CNDDB occurrence of Red Bluff dwarf rush within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Red Bluff dwarf rush has potential to occur within the Study Area.

3.2.4.12 Colusa Layia

Colusa layia (*Layia septentrionalis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in sandy or serpentinite soils in chaparral, cismontane woodland, and valley and foothill grasslands. Colusa layia blooms from April through May and is known to occur at elevations ranging from 328 to 3,593 feet AMSL. Colusa layia is endemic to California; the current range of this species includes Butte, Colusa, Glenn, Lake, Mendocino, Napa, Sonoma, Sutter, Tehama, and Yolo counties.

There are no CNDDB occurrences of Colusa layia within 5 miles of the Study Area. The nonnative annual grassland within the Study Area may provide suitable habitat for this species. Colusa layia has potential to occur within the Study Area.

3.2.4.13 Bristly Leptosiphon

Bristly leptosiphon (*Leptosiphon acicularis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an annual herb that occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland. Bristly leptosiphon blooms from

April through July and is known to occur at elevations ranging from 180 to 4,920 feet AMSL. Bristly leptosiphon is endemic to California; the current range of this species includes Alameda, Butte, Colusa, Humboldt, Kern, Lake, Marin, Mendocino, Napa, Placer, San Benito, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, and Yuba counties.

There are no CNDDB occurrences of bristly leptosiphon within 5 miles of the Study Area. However, the nonnative annual grassland within the Study Area may provide suitable habitat for this species. Bristly leptosiphon has potential to occur within the Study Area.

3.2.4.14 Serpentine Leptosiphon

Serpentine leptosiphon (*Leptosiphon ambiguus*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs usually in serpentinite soil within cismontane woodland, coastal scrub, valley and foothill grassland. Serpentine leptosiphon blooms from March through June and is known to occur at elevations ranging from 395 to 3,710 feet AMSL. Serpentine bird's-beak is endemic to California; its current range includes Alameda, Contra Costa, Merced, San Benito, Santa Clara, Santa Cruz, San Joaquin, San Mateo, and Stanislaus counties.

There are no CNDDB occurrences of serpentine leptosiphon within 5 miles of the Study Area. The nonnative annual grassland within the Study Area may provide marginally suitable habitat for this species. Serpentine leptosiphon has low potential to occur within the Study Area.

3.2.4.15 Butte County Meadowfoam

Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) is listed as endangered pursuant to both the federal and California ESAs, and is designated as a CRPR 1B.1 species. Butte County meadowfoam is an herbaceous annual that occurs in vernal pools and mesic areas of valley and foothill grasslands. Butte County meadowfoam blooms from March through May and is known to occur at elevations between 150 to 3,050 feet AMSL. Butte County meadowfoam is endemic to California; the current known range for this species includes Butte County.

There are two CNDDB occurrences of Butte County meadowfoam within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Butte County meadowfoam has potential to occur within the Study Area.

3.2.4.16 Woolly Meadowfoam

Woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in vernally mesic chaparral, cismontane woodland, valley and foothill grassland, and vernal pools. Woolly meadowfoam blooms from March through May and is known to occur at elevations ranging from 197 to 4,380 feet AMSL. The current known range for this species in California includes Butte, Lake, Lassen, Napa, Shasta, Siskiyou, Tehama, and Trinity counties.

There are no CNDDB occurrences of woolly meadowfoam within 5 miles of the Study Area. However, the seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Woolly meadowfoam has potential to occur within the Study Area.

3.2.4.17 Sylvan Microseris

Sylvan microseris (*Microseris sylvatica*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous perennial that occurs in chaparral, cismontane woodland, Great Basin scrub, pinyon juniper woodland, and valley and foothill grasslands; serpentinite (rarely). Sylvan microseris blooms from March through June and is known to occur at elevations ranging from 150 to 4,920 feet AMSL. Sylvan microseris is endemic to California; its current range includes Alameda, Butte, Contra Costa, Fresno, Kern, Los Angeles, Napa, San Benito, Tulare, and Yolo counties. Occurrence confirmed but possibly extirpated in Los Angeles County.

There are no CNDDB occurrences of Sylvan microseris within 5 miles of the Study Area. However, the nonnative annual grassland within the Study Area may provide suitable habitat for this species. Sylvan microseris has potential to occur within the Study Area.

3.2.4.18 Veiny Monardella

Veiny monardella (*Monardella venosa*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs on heavy clay soils in cismontane woodland and valley and foothill grasslands. Veiny monardella blooms from May through July and is known to occur at elevations ranging from 197 to 1,345 feet AMSL. Veiny monardella is endemic to California; the current range of this species includes Butte, Sutter, Tuolumne, and Yuba counties, but is believed to be extirpated from Sutter County.

There are no CNDDB occurrences of veiny monardella within 5 miles of the Study Area. However, the nonnative annual grassland within the Study Area may provide marginally suitable habitat for this species. Veiny monardella has low potential to occur within the Study Area.

3.2.4.19 Tehama Navarretia

Tehama navarretia (*Navarretia heterandra*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.3 species. This species is an herbaceous annual that occurs in mesic areas in valley and foothill grassland and vernal pools. Tehama navarretia blooms between April and June and is known to occur at elevations ranging from 98 to 3,314 feet AMSL. The current range for Tehama navarretia in California includes Butte, Colusa, Lake, Napa, Shasta, Tehama, Trinity, and Yuba counties.

There are no CNDDB occurrences of Tehama navarretia within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Tehama navarretia has potential to occur within the Study Area.

3.2.4.20 Slender Orcutt Grass

Slender Orcutt grass (*Orcuttia tenuis*) is listed as threatened pursuant to the federal ESA, is listed as endangered pursuant to the California ESA, and is designated as a CRPR 1B.1 species. This species is an herbaceous annual that occurs in often gravelly soils in vernal pools primarily on substrates of volcanic origin. This species is known to occur in the same type of vernal pool complexes as Sacramento Orcutt grass in Sacramento County; however, these species have not been observed coexisting in the same vernal pool. The median area of pools occupied by populations studied by Stone et al. (1988, as cited in USFWS 2005) was 1.6 acres and ranged from 0.2 to 111.0 acres. Slender Orcutt grass blooms from May through September and is known to occur at elevations ranging from 115 to 5,774 feet AMSL. Slender Orcutt grass is endemic to California; the current range for this species includes Butte, Lake, Lassen, Modoc, Plumas, Sacramento, Shasta, Siskiyou, and Tehama counties.

There are two CNDDB occurrences of slender Orcutt grass within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Slender Orcutt grass has potential to occur within the Study Area.

3.2.4.21 Ahart's Paronychia

Ahart's Paronychia (*Paronychia ahartii*) is not listed as pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.1 species. Ahart's paronychia is an annual herb that occurs in cismontane woodland, valley foothill and grassland and vernal pools. Ahart's paronychia blooms at elevations ranging from 98 to 1,673 feet AMSL. Ahart's paronychia is endemic to California; the current range of this species includes Butte, Shasta, and Tehama counties.

There are two CNDDB occurrences of Ahart's paronychia within 5 miles of the Study Area. The seasonal wetlands/vernal pools and the nonnative annual grassland within the Study Area may provide suitable habitat for this species. Ahart's paronychia has potential to occur within the Study Area.

3.2.4.22 Butte County Golden Clover

Butte County golden clover (*Trifolium jokerstii*) is not listed pursuant to the federal and California ESAs, but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in vernal pools and mesic areas in valley and foothill grassland. Butte County golden clover blooms between March and May and is known to occur at elevations ranging from 164 to 1,575 feet AMSL. Butte County golden clover is endemic to California; its current range includes Butte County.

There are five CNDDB occurrences of Butte County golden clover within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Butte County golden clover has potential to occur within the Study Area.

3.2.4.23 Greene's Tuctoria

Greene's tuctoria (*Tuctoria greenei*) is listed endangered pursuant to the ESA, is listed as rare pursuant to the California ESA, and is designated as a CRPR 1B.1 species. This species is an herbaceous annual that

occurs in vernal pools. Greene's tuctoria blooms from May through July and is known to occur at elevations ranging from 98 to 3,510 feet AMSL. Greene's tuctoria is endemic to California; the current range of this species includes Butte, Fresno, Glenn, Madera, Merced, Modoc, Shasta, San Joaquin, Stanislaus, Tehama, and Tulare counties. It is considered extirpated from Fresno, Madera, San Joaquin, Stanislaus, and Tulare counties.

There are two CNDDB occurrences of Greene's tuctoria within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Greene's tuctoria has potential to occur within the Study Area.

3.2.5 Invertebrates

A total of five special-status invertebrate species were identified as having the potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). Of those, two species were determined to be absent from the Study Area due to the lack of suitable habitat or due to the Study Area being outside of the known elevational range for the species. No further discussion of those species is provided in this assessment. A brief description of the remaining three special-status invertebrates that have the potential to occur within the Study Area is presented below.

3.2.5.1 Conservancy Fairy Shrimp

The conservancy fairy shrimp (*Branchinecta conservatio*) is listed as endangered pursuant to the federal Endangered Species Act. This fairy shrimp is endemic to California and is found in grasslands in the northern two thirds of the Central Valley (Eriksen and Belk 1999). The historic distribution of conservancy fairy shrimp is not known, but it likely occurred throughout a large portion of the Central Valley and Southern Coastal regions of California. Until recently, this species has only been known from a few disjunct populations in California, including four clustered populations in the Vina Plains area in Tehama and Butte Counties, Jepson Prairie Preserve in Solano County, the Sacramento National Wildlife Refuge in Glenn County, the Tule Ranch Unit of CDFW's Yolo Basin Wildlife Area in Yolo County, the Grasslands Ecological Area in Merced County, one location in Stanislaus County, three locations in the Southern Sierra Foothills Vernal Pool Region, and two locations near the Santa Barbara Vernal Pool Region (USFWS 2003, 2006). In April 2007, USFWS reported that a single conservancy fairy shrimp was documented in one vernal pool within the Mariner Conservation Bank in Placer County, near the town of Lincoln, California. The life cycle of conservancy fairy shrimp is reliant on the ephemeral conditions of its vernal habitat. It inhabits a variety of different landforms and soil types, and is often found in large, turbid pools with low conductivity, total dissolved solids, and alkalinity.

There are no CNDDB occurrences of conservancy fairy shrimp within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Conservancy fairy shrimp has potential to occur within the Study Area.

3.2.5.2 Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened pursuant to the federal ESA. Vernal pool fairy shrimp may occur in seasonal ponds, vernal pools, and swales during the wet season,

which generally occurs from December through May. This species can be found in a variety of pool sizes, ranging from less than 0.001 acre to more than 24.5 acres. The shrimp hatch from cysts when colder water (10°Celsius [°C] [50°F] or less) fills the pool and mature in as few as 18 days, under optimal conditions (Eriksen and Belk 1999). At maturity, mating takes place and cysts are dropped. Vernal pool fairy shrimp occur in disjunct patches dispersed across California's Central Valley from Shasta to Tulare counties, the central and southern Coast Ranges from northern Solano to Ventura counties, and three areas in Riverside County (USFWS 2003).

There are 12 CNDDB occurrences of vernal pool fairy shrimp within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Vernal pool fairy shrimp has potential to occur within the Study Area.

3.2.5.3 Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp (*Lepidurus packardi*) is listed as endangered pursuant to the federal ESA. This species inhabits vernal pools containing clear to highly turbid water, ranging in size from 0.001 to 89.0 acres. Vernal pool tadpole shrimp are distinguished from other vernal pool branchiopods discussed in this document by a large, shield-like carapace that covers the anterior half of their body. Cysts hatch during the wet season and the shrimp reach maturity in a few weeks. This species matures slowly and is long-lived, relative to other species. Vernal pool tadpole shrimp will continue to grow as long as the pools they occur in remain inundated, and in some instances can survive for 6 months or longer. The geographic range of vernal pool tadpole shrimp extends from Shasta County to northern Tulare County in California's Central Valley, and in the central coast range from Solano County to Alameda County.

There are four CNDDB occurrences of vernal pool tadpole shrimp within 5 miles of the Study Area. The seasonal wetlands/vernal pools within the Study Area may provide suitable habitat for this species. Vernal pool tadpole shrimp has potential to occur within the Study Area.

3.2.6 Fish

Four special-status fish species were identified as having potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). However, upon further analysis and after the site visit, all four species were considered to be absent from the Study Area due to the lack of suitable habitat and/or because the Study Area is outside of the known geographic range for these species. No further discussion of these species is provided within this assessment.

3.2.7 Amphibians

A total of three special-status amphibians were identified as having the potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). Of those, two species were determined to be absent from the Study Area due to the lack of suitable habitat or due to the Study Area being outside of the known elevational range for the species. No further discussion of those species is provided in this assessment. A brief description of the remaining special-status amphibian that has the potential to occur within the Study Area is presented below.

3.2.7.1 Western Spadefoot

The western spadefoot (*Spea hammondii*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a CDFW Species of Special Concern (SSC). Necessary habitat components of the western spadefoot include loose friable soils in which to burrow in upland habitats and breeding ponds. Breeding sites include temporary rain pools, such as vernal pools and seasonal wetlands, or pools within portions of intermittent drainages (Jennings and Hayes 1994). Spadefoots spend most of their adult life within underground burrows or other suitable refugia, such as rodent burrows. In California, western spadefoot toads are known to occur from the Redding area, Shasta County southward to northwestern Baja California, at elevations below 4,475 feet AMSL.

There is one CNDDB occurrence of western spadefoot within 5 miles of the Study Area. The seasonal wetlands/vernal pools and nonnative annual grassland within the Study Area supports potentially suitable habitat for this species. Western spadefoots have potential to occur in the Study Area.

3.2.8 Reptiles

A total of three special-status reptiles were identified as having the potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). Of those, two species were determined to be absent from the Study Area due to the lack of suitable habitat or due to the Study Area being outside of the known elevational range for the species. No further discussion of those species is provided in this assessment. A brief description of the remaining special-status reptile that has the potential to occur within the Study Area is presented below.

3.2.8.1 Blainville's Horned Lizard

Blainville's horned lizard (*Phrynosoma blainvillii*) is considered a CDFW SSC and is a relatively large (to 105 millimeters in snout-vent length), dorsoventrally flattened, rounded lizard found historically from Redding, California, to Baja, Mexico (Jennings and Hayes 1994). This diurnal species can occur within a variety of habitats including scrubland, annual grassland, valley-foothill woodlands and coniferous forests, though it is most common along lowland desert sandy washes and chaparral (Stebbins 2003). In the Central Valley, the species ranges from southern Tehama County southward. In the Sierra Nevada it occurs from Butte County south to Tulare County, and in the Coast Ranges it occurs from Sonoma County south into Baja California (California Department of fish and Game [CDFG] 1988). It occurs from sea level to 8,000 feet AMSL and an isolated population occurs in Siskiyou County.

There are no CNDDB occurrences of Blainville's horned lizard within 5 miles of the Study Area (CDFW 2022a). However, the nonnative annual grassland within the Study Area may provide suitable habitat for this species. Blainville's horned lizard has potential to occur onsite.

3.2.9 Birds

A total of 21 special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 1 of Appendix 3.2-A). Of those, 16 species were determined to be absent from the Study Area due to the lack of suitable habitat and/or due to the Study Area being

outside of the known geographic range of the species. No further discussion of those species is provided in this assessment. A brief description of the remaining five species that have the potential to occur within the Study Area is presented below.

3.2.9.1 Northern Harrier

The northern harrier (*Circus hudsonius*) is not listed pursuant to either the California or federal ESAs; however, it is considered to be a USFWS Bird of Conservation Concern (BCC) and a CDFW SSC. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground-nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities usually in areas with dense vegetation. Foraging occurs within a variety of open environments such as marshes, agricultural fields, and grasslands. Nesting occurs during April through September.

There is one CNDDB occurrence of northern harrier within 5 miles of the Study Area. The nonnative annual grassland represents marginally suitable nesting habitat for this species. Northern harrier have low potential to occur onsite.

3.2.9.2 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and are protected pursuant to the California ESA. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta. In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawk nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Otospermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

The nearest CNDDB occurrence of Swainson's hawk is located between 5 and 6 miles south of the Study Area. There is no potentially suitable nesting habitat onsite. However, the nonnative annual grassland within the Study Area may provide suitable foraging habitat for this species. Swainson's hawk has potential to forage onsite.

3.2.9.3 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Burrowing owls inhabit dry

open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds. This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel, but may also use manufactured structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement. The breeding season typically occurs between February 1 and August 31.

There is one CNDDB occurrence of burrowing owl within 5 miles of the Study Area but none were observed during the site reconnaissance. The nonnative annual grassland within the Study Area may provide suitable habitat for this species. Burrowing owl has potential to occur within the Study Area.

3.2.9.4 Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to either the California or federal ESAs; but is considered an SSC by the CDFW. The loggerhead shrike nests throughout California except the northwestern corner, montane forests, and high deserts (Small 1994). The loggerhead shrike nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 2020). The nesting season extends from March through July.

There are no CNDDB occurrences of loggerhead shrike within 5 miles of the Study Area. However, a small shrub along the northern boundary could provide suitable nesting habitat for this species. Loggerhead shrike have potential to occur onsite.

3.2.9.5 Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) was granted emergency listing for protection under the California ESA in December 2014 but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed tricolored blackbirds as a threatened species in 2018. In addition, it is currently considered a USFWS BCC and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California. Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. Tricolored blackbird nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation. They feed mainly on grasshoppers during the breeding season but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields. The nesting season is generally from March through August.

There are four CNDDB occurrences of tricolored blackbird within 5 miles of the Study Area but there is no potentially suitable nesting habitat onsite. However, the nonnative annual grassland within the Study Area may provide suitable foraging habitat for this species. Tricolored blackbirds have potential to forage onsite.

3.2.9.6 Other Protected Birds

In addition to the above-listed special-status birds, all native or naturally occurring birds and their occupied nests/eggs are protected under the California Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). The Study Area supports potential nesting habitat for a variety of common birds protected under these regulations.

3.2.10 Mammals

Three special-status mammals were identified as having potential to occur in the vicinity of the Study Area based on the literature review (Table 1 of Appendix 3.2-A). However, upon further analysis and after the site visit, all three species are considered to be absent from the Study Area due to the lack of suitable habitat and/or because the Study Area is outside of the known geographic range for these species. No further discussion of these species is provided within this assessment.

3.2.11 Critical Habitat and Essential Fish Habitat

There are no Critical Habitats mapped within the Study Area. The Study Area is not Essential Fish Habitat.

3.2.12 Riparian Habitats and Sensitive Natural Communities

There are no riparian habitats present within the Study Area. Five other sensitive natural communities were identified as having potential to occur within the vicinity of the Study Area based on the literature review. These include Northern Hardpan Vernal Pool, Northern Basalt Flow Vernal Pool, Northern Volcanic Mud Flow Vernal Pool, Great Valley Cottonwood Riparian Forest, and Great Valley Willow Scrub. Upon further analysis and site reconnaissance, the seasonal wetlands delineated by Rincon onsite could be categorized as Northern Hardpan Vernal Pool. The seasonal wetlands onsite fit the general description of Northern Hardpan Vernal Pools.

3.2.13 Wildlife Movement/Corridors and Nursery Sites

The Study Area is located in close proximity to residential development and subject to some disturbances from offroad vehicle use. The Study Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW and is not identified as a critical and noncritical winter and summer range, fall holding areas, fawning grounds, or migration corridors for mule deer (*Odocoileus hemionus*, CDFW 2022b). Therefore, the Study Area is not expected to support critical wildlife movement corridors or potential nursery sites. However, a variety of common bird species were observed within the Study Area during the site reconnaissance and other wildlife species also likely move through the Study Area.

For the purposes of this analysis, nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries or bat maternity roosts. This data is available through CDFW's Biogeographic Information and Observation System database or as occurrence records in the CNDDB and is supplemented with the results of the site reconnaissance (CDFW 2022b). No nursery sites have been documented within the Study Area and none were observed during the site reconnaissance.

3.2.14 Regulatory Setting

3.2.14.1 Federal

Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan (HCP) is developed.

Section 7

Section 7 of the ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify Critical Habitat for listed species. If adverse effects to a species or its Critical Habitat are likely, the applicant must conduct a BA for the purpose of analyzing the potential effects of the project on listed species and critical habitat to establish and justify an *effect determination*. The federal agency reviews the BA; if it concludes that the project may adversely affect a listed species or its habitat, it prepares a Biological Opinion (BO). Through consultation and the issuance of a BO, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. The BO may recommend *reasonable and prudent alternatives* to the project to avoid jeopardizing or adversely modifying habitat. If direct and/or indirect effects will occur to Critical Habitat that appreciably diminish the value of Critical Habitat for both the survival and recovery of a species, the adverse modifications will require formal consultation with USFWS or NMFS.

Section 10

When no discretionary action is being taken by a federal agency but a project may result in the take of listed species, an incidental take permit (ITP) under Section 10 of the ESA is necessary. The purpose of the ITP is to authorize the take of federally listed species that may result from an otherwise lawful activity, not to authorize the activities themselves. In order to obtain an ITP under Section 10, an application must be submitted that includes an HCP. In some instances, applicants, USFWS, and/or NMFS may determine that an HCP is necessary or prudent, even if a discretionary federal action will occur. The purpose of the HCP planning process associated with the permit application is to ensure that adequate minimization and mitigation for impacts to listed species and/or their habitat will occur.

Critical Habitat

Critical Habitat is defined in Section 3 of the ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical Habitat designations identify, to the extent known and using the best scientific data available, the physical or biological features needed for life processes. Physical and biological features that are essential to the conservation of the species may require special management considerations or protection. These include but are not limited to:

- space for individual and population growth and for normal behavior;
- food, water, air, light, minerals, or other nutritional or physiological requirements;
- cover or shelter;
- sites for breeding, reproduction, or rearing (or development) of offspring; or
- habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

Migratory Bird Treaty Act

The MBTA implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (e.g., rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "…restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the USACE. *Discharges of fill material* is defined as the addition of fill material into Waters of the U.S., including, but not limited to the following:

placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 CFR Section 328.2(f)]. In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to Waters of the U.S. (more than 0.5 acre of impact) may require an individual permit. Projects that only minimally affect Waters of the U.S. (less than 0.5 acre of impact) may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the RWQCB.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the USACE, for the construction of any structure in or over any navigable Waters of the U.S. Structures or work outside the limits defined for navigable Waters of the U.S. require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable Water of the U.S., and applies to all structures, from the smallest floating dock to the largest commercial undertaking. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. The alteration of a USACE-federally authorized civil works project requires a permit pursuant to Section 14 of the Act, as amended and codified in 33 USC 408. Projects with minimal impacts require approval by the USACE Sacramento District Construction Operations Group; however, projects with more substantial impacts may require USACE Headquarters review. Coordination with the Central Valley Flood Protection Board, who serve as the Non-Federal Sponsor, is required as a part of the process of obtaining a Section 408 permit.

3.2.14.2 State

California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful projects under permits issued by CDFW.

Fully Protected Species

The State of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing incidental take permits for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan (NCCP) within which such species are covered.

Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code Sections 1900-1913) was established with the intent to "preserve, protect and enhance rare and endangered plants in this state." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as *endangered* or *rare*. The NPPA prohibits the take of plants listed under the NPPA, though the NPPA contains exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code Section 3511 described above, the California Fish and Game Code includes a several sections that specifically protect certain birds:

- Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.

- Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.
- Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the State Porter-Cologne Water Quality Act. These regulations require compliance with the NPDES, including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a SWPPP. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

California Environmental Quality Act

In accordance with CEQA Guidelines Section 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria parallel the definitions used in the ESA, California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the ESA, California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as SSC by CDFW, birds identified as BCC by USFWS, and plants identified by the CNPS as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

Species of Special Concern

The CDFW defines SSC as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal ESA, California ESA, or California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered or meets the state definition of threatened or endangered but has not formally been listed.

- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

U.S. Fish and Wildlife Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, USFWS published a list of BCC for the U.S. (USFWS 2021). The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

Sensitive Natural Communities

The CDFW maintains the California Natural Community List (CDFW 2021), which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation* (Sawyer et al. 2009), along with their respective state and global rarity ranks. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Impacts to sensitive natural communities may be considered significant under CEQA depending on the policy of the lead agency.

California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2022), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, nongovernmental organizations, and private-sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.

- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the threat rank; and differences in threat ranks do not constitute additional or different protection (CNPS 2022).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2, and 3 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (e.g., rare, threatened, or endangered) species are considered significant. Assessment of *impact significance* to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines, which provides examples of impacts that would normally be considered significant.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA because although the impacts would

result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

3.2.14.3 Local

Oroville 2030 General Plan

The Open Space, Natural Resources, and Conservation Element of the Oroville General Plan, adopted in 2015, is dedicated to preserving and improving the quantity, quality, and character of open space in Oroville. The Element includes Section E which addresses biological resources in the City. The following goals and policies from the Biological Resources section of the Element pertain to Project development:

Goal OPS-8: Preserve and protect all special-status species, species that are candidates for federal or state listing. State species of special concern, and CNPS listed plant species.

Policies:

P8.:1 Require a biological assessment of any proposed project site where federally-, or State-listed species or critical habitat may be present.

P8.2: Require a habitat-based site assessment during the project design phase to determine the potential for special-status species to occur within a proposed project area. If potential habitat for special-status plant or animal species is identified, additional focused surveys may need to be conducted during the appropriate season.

P8.3: Require agency consultation for proposed projects for which there is the potential to impact federal or State-listed species, or other appropriate agency assistance for non-listed special-status species.

P8.6: If special-status plant or animal species are found to be located within a development site, the developer shall mitigate project impacts in accordance with State and federal law. Examples of mitigation may include:

- *Redesign the proposed project to avoid and minimize impacts.*
- *Restrict construction to specific seasons based on project specific special-status species issues (e.g. minimizing impacts to special-status nesting birds by constructing outside of the nesting season).*
- *Confine construction disturbance to the minimum area necessary to complete the work. Mitigate for the loss of special-status species by purchasing credits at an approved conservation bank (if a bank exists for the species in question), funding restoration or habitat improvement projects at existing preserves in Butte County, or purchasing or donating mitigation lands.*
- *Maintain a minimum 100-foot buffer on each side of all riparian corridors, creeks and streams for special-status and common wildlife. Ruddy Creek would be an example of where this applies.*

- *Establish setbacks from the outer edge of special-status species habitat areas.*
- *Prohibit livestock grazing or drainage into the setback of special-status species habitat areas.*
- *Construction of barriers*

Goal OPS-9: Protect areas of significant wildlife habitat and sensitive biological resources to maintain biodiversity among plant and animal species in the City of Oroville and the surrounding area.

Policies:

P9.2: Minimize loss of wetland value or acreage consistent with the needs of wildlife and humans, to the extent practicable and as regulated by State and federal law.

P9.5: Require the preparation of a site-specific tree management and preservation report by a certified arborist or urban forester for development proposals on sites that contain significant oak woodlands and related habitat. This report shall include recommendations for the retention of healthy mature trees wherever feasible and promote the concept of oak regeneration corridors within project design.

P9.6: Protect sensitive plant and wildlife habitat from destruction and intrusion by incompatible land uses where appropriate. All efforts to protect sensitive habitats should consider:

- *Sensitive habitat and movement corridors in the areas adjacent to development sites, as well as on the development site itself.*
- *Prevention of habitat fragmentation and loss of habitat connectivity.*
- *Use of appropriate protection measures for sensitive habitat areas such as non-disturbance easements and open space zoning.*
- *On-site or off-site habitat restoration as a potential mitigation, with a no net loss of habitat policy.*
- *Potential mitigation or elimination of impacts through mandatory clustering of development, and/or project redesign.*

P9.7: Protect native plant species in undisturbed portions of a development site and use native species for replanting in disturbed portions of the project site.

P9.10: Encourage the coordinated design of large projects to preserve on-site open space, cluster development (where feasible) and conserve natural communities and/or habitat for special-status species that have been identified in proposed project areas.

3.2.15 Environmental Impacts

3.2.15.1 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, implementation of the project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.), either individually or cumulatively, through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.2.15.2 Methods of Analysis

Literature Review

The following resources were reviewed to determine the special-status species that have been documented within or in the vicinity of the Study Area.

- CDFW CNDDB data for the "Oroville, California" 7.5-minute USGS quadrangle and the nine surrounding USGS quadrangles (CDFW 2022a).
- USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2022).
- CNPS' electronic Inventory of Rare and Endangered Plants of California was queried for the "Oroville, California" 7.5-minute USGS quadrangles and the nine surrounding quadrangles (CNPS 2022).
- NMFS Resources data for the "Oroville, California" 7.5-minute USGS quadrangle (National Oceanic and Atmospheric Administration [NOAA] 2022b).

The results of the database queries are included in Appendix 3.2-A.

Aerial imagery and site or species-specific background information, as cited throughout this document, were reviewed to determine the potential for occurrence of sensitive biological resources within or in the vicinity of the Study Area.

Field Surveys Conducted

ECORP biologist Keith Kwan conducted a reconnaissance-level field survey for the Study Area on March 1, 2022. The reconnaissance survey entailed visual observation and documentation of onsite biological resources. Special attention was given to identifying those portions of the Study Area with the potential to support special-status species and sensitive habitats. During the field survey, biological communities occurring onsite were characterized and the following biological resource information was collected:

- Potential aquatic resources
- Vegetation communities
- Plant and animal species directly observed
- Animal evidence (e.g., scat, tracks)
- Existing active raptor nest locations
- Special habitat features
- Representative photographs

Special-Status Species Considered for the Study Area

Based on database queries, a list of special-status species that are considered to have the potential to occur within the vicinity of the Study Area was generated (Table 1). Each of the species was evaluated for its potential to occur within the Study Area through the literature review and field observations, and categorized based on the following criteria:

- **Present** - Species was observed during the site visit or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Study Area.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occurs and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other documentation.

3.2.15.3 Project Impacts and Mitigation Measures

Impact BIO-1:	Project implementation could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
Impact Determination:	Less than Significant with Mitigation
Threshold:	*Substantial adverse impact, either directly or through habitat modifications, on any plant fish or wildlife species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

Impact Discussion

The Study Area supports potential habitat for special-status species within the impact area. Potential effects to special-status species are summarized in the following sections by taxonomic group or species.

Special-Status Plants

There is potential habitat for four federally or state-listed plant species in the Study Area, and there is potential or low potential for 19 other non-listed special-status plant species to occur. Project development would permanently remove or alter marginally suitable or suitable potential habitat for special-status plants, and in the chance that special-status plant populations occur onsite they may be directly or indirectly impacted by development.

Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3 would reduce potential impacts to special-status plants to a less than significant level.

Special-Status Aquatic Invertebrates

There is potential habitat for three federally listed invertebrate species within the Study Area. The seasonal wetlands present onsite represent potential habitat for listed aquatic invertebrates. Project development would permanently remove or alter suitable potential habitat for special-status aquatic invertebrates, and in the chance that special-status aquatic invertebrates occur onsite they may be directly or indirectly impacted by development. As such, mitigation of these potential impacts is required. Implementation of Mitigation Measures BIO-2 and BIO-4 would reduce potential impacts to special-status *aquatic invertebrates* to a less than significant level.

Special-Status Amphibians

There is no potential habitat for federally or state-listed amphibian species in the Study Area, but there is potential for one other non-listed special-status amphibian species to occur. Project development would permanently remove or alter suitable potential habitat for special-status amphibians, and in the chance that special-status amphibians occur onsite they may be directly or indirectly impacted by development. As such, mitigation of these potential impacts is required. Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-5 would reduce potential impacts to special-status amphibians to a less than significant level.

Special-Status Reptiles

There is no potential habitat for federally or state-listed reptile species in the Study Area, but there is potential for one other non-listed special-status reptile species to occur, the Blainville's horned lizard. Project development would permanently remove or alter suitable potential habitat for special-status reptiles, and in the chance that special-status reptiles occur onsite they may be directly or indirectly impacted by development. As such, mitigation of these potential impacts is required. Implementation of Mitigation Measures BIO-1, BIO-2 and BIO-6 would reduce potential impacts to special-status reptiles to a less than significant level.

Special-Status and Other Protected Birds

There is potential foraging habitat for two state-listed bird species (Swainson's hawk and tricolored blackbird) in the Study Area, and there is low potential or potential for three non-listed special-status bird species and a variety of other birds that are protected under the MBTA and the California Fish and Game Code. Project development would permanently remove or alter potential foraging habitat for two state-listed birds (Swainson's hawk and tricolored blackbird) and a minimal amount of nesting habitat for other non-listed protected birds in the development area. As such, mitigation of these potential impacts is required. Implementation of Mitigation Measures BIO-2, BIO-7, and BIO-8 would reduce potential impacts to special-status birds and other protected birds to a less than significant level.

Mitigation Measures

The following mitigation measures shall apply to the Proposed Project.

BIO-1: **Implement Erosion Control Measures and BMPs.** The Project proponent shall implement erosion control measures and BMPs to reduce the potential for sediment or pollutants at the Project site. Examples of appropriate measures are included below.

- Avoided aquatic resources should be clearly demarcated prior to construction. Avoidance buffers should be consistent with the City of Oroville requirements and/or requirements of regulatory permits. Erosion control measures should be placed between avoided aquatic resources and the outer edge of the impact limits prior to commencement of construction activities. Such identification and erosion control measures should be properly maintained until construction is completed and the soils have been stabilized.

- Any fueling in the Study Area should use appropriate secondary containment techniques to prevent spills.

Timing/Implementation: *Prior to and during grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-2: **Worker Environmental Awareness Program.** The Project proponent shall require a mandatory Worker Environmental Awareness Program provided by qualified biologist for all contractors, work crews, and any onsite personnel to aid workers in recognizing special status species and sensitive biological resources that may occur on-site prior to any construction or grading of the site. The program shall include identification of the special status species and their habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-3: **Special-Status Species – Plants.** There is potential or low potential for 23 special-status plants to occur within the Study Area. The following mitigation measures are required to minimize potential impacts to special-status plants.

- Perform floristic plant surveys according to USFWS, CDFW, and CNPS protocols prior to construction. Surveys shall be conducted by a qualified biologist and timed according to the appropriate phenological stage for identifying target species. Known reference populations shall be visited and/or local herbaria records shall be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project site, no further measures pertaining to special-status plants are necessary.
- If special-status plants are identified within 25-feet of the Project impact area, implement the following measures:
- If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones shall include the extent of the special-status plants plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist/biological monitor shall be present must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
- If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. Mitigation measures shall be developed in consultation with CDFW. Mitigation measures may include permanent preservation of onsite or offsite

habitat for special-status plants and/or translocation of plants or seeds from impacted areas to unaffected habitats.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-4: **Special-Status Species – Invertebrates.** There is potential for three federally listed special-status invertebrates to occur within the Study Area. The following mitigation measure is required to minimize potential impacts to special-status invertebrates.

- No Project construction shall proceed in areas supporting potential habitat for federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until incidental take authorization has been issued by USFWS under Section 7 (Biological Opinion) or Section 10 (HCP) of the ESA and the Project proponent has abided by conditions in the BO or HCP, including all conservation and minimization measures. Conservation and minimization measures shall include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction and compensatory mitigation for loss of suitable habitat.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-5: **Western Spadefoot.** Western spadefoot have potential to occur within the Study Area. Implementation of Mitigation Measures BIO-1, BIO-2, and the following mitigation measure would avoid and/or minimize potential adverse effects to western spadefoot.

- A qualified biologist shall conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the Project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, a plan to collect and relocate adult and larval western spadefoot and egg masses to suitable habitat that will be preserved in perpetuity as required according to the BO in Mitigation Measure BIO-4.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-6: **Blainville's Horned Lizard.** Blainville's horned lizard have potential to occur within the Study Area. Implementation of Mitigation Measures BIO-1, BIO-2, and the following mitigation measure would avoid and/or minimize potential adverse effects to Blainville's horned lizard.

- A qualified biologist shall conduct a preconstruction Blainville's horned lizard survey in Project impact areas within 48 hours prior to construction activities. Any Blainville's horned lizard individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, consult with CDFW to develop avoidance and minimization measures, which may include, but not limited to, fencing avoidance areas, development of a relocation plan, and/or onsite monitoring during site construction.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-7: **Special-Status Species – Birds.** Three special-status birds and various other protected birds have the potential to nest within the Study Area. The following mitigation is required to minimize potential impacts to nesting birds:

- If construction is to occur during the nesting season (generally February 1 through August 31), conduct a preconstruction nesting bird survey of all suitable nesting habitat on the Project within 14 days of the commencement of construction. The survey shall be conducted within a 500-foot radius of Project work areas for raptors and within a 100-foot radius for other nesting birds. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. Preconstruction nesting surveys are not required for construction activity outside the nesting season.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

BIO-8: **Swainson's Hawk and Tricolored Blackbird.** The Study Area supports potential foraging habitat for two state-listed birds: Swainson's hawk and tricolored blackbird. The following mitigation is recommended to minimize potential impacts to foraging habitat:

- Mitigate for the loss of Swainson's hawk according to the 1994 CDFG's *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*. The required measures to address Swainson's hawk

foraging habitat impact and mitigation measure BIO-9 will be sufficient to mitigate impacts to tricolored blackbird foraging habitat.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

Impact BIO-2:	Project implementation could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
Impact Determination:	Less than Significant with Mitigation
Threshold:	*Substantial adverse impact on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.*

Impact Discussion

There are no riparian habitats present within the Study Area. Five other sensitive natural communities were identified as having potential to occur within the vicinity of the Study Area based on the literature review (ECORP 2023). These include Northern Hardpan Vernal Pool, Northern Basalt Flow Vernal Pool, Northern Volcanic Mud Flow Vernal Pool, Great Valley Cottonwood Riparian Forest, and Great Valley Willow Scrub. Upon further analysis and site reconnaissance, the seasonal wetlands delineated by Rincon onsite could be categorized as Northern Hardpan Vernal Pool. The seasonal wetlands onsite fit the general description of Northern Hardpan Vernal Pools, which is a sensitive natural community. In addition to Mitigation Measures BIO-1 and BIO-2, implementation of Mitigation Measure BIO-9 would minimize potential impacts to Northern Hardpan Vernal Pools.

Mitigation Measures

Implement Mitigation Measures BIO-1, BIO-2, and BIO-9.

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

Impact BIO-3:	Project implementation could cause a substantial adverse effect on state or federally protected wetlands (i.e., including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means.
Impact Determination:	Less than Significant with Mitigation
Threshold:	*Substantial adverse effect on state or federally protected wetlands.*

Impact Discussion

Rincon Consultants, Inc. prepared the Jurisdictional Waters and Wetlands Delineation, dated March 2021, for the Study Area. As shown in Figure 3.2-1, Rincon delineated 78 depressional seasonal wetlands totaling 2.62 acres, as listed in Table 3.2-1.

These wetlands were categorized as seasonal wetlands by Rincon but some could be considered vernal pools by other wetland delineators. The USEPA defines vernal pools as:

> "seasonal depressional wetlands that occur under Mediterranean climate conditions of the West Coast and in glaciated areas of the northeastern and midwestern states. They are covered by shallow water for variable periods from winter to spring but may be completely dry for most of the summer and fall" (USEPA 2022).

At present, there has been no verification or jurisdictional determination of these aquatic resources conducted by the USACE.

When Rincon prepared the delineation report, the definition of Waters of the U.S. was based on the NWPR. Under the NWPR, the wetlands onsite would probably not have been considered Waters of the U.S. as stated in the Rincon report. However, the NWPR was vacated and remanded in August 2021. In the current definition of Waters of the U.S. according to the pre-2015 regulatory regime, include the *Rapanos* Guidance, wetlands adjacent to nonnavigable tributaries that are not relatively permanent would require a significant nexus evaluation to establish federal jurisdiction. The wetlands onsite would require a significant nexus evaluation by the USACE in order to determine jurisdiction.

Regardless of federal jurisdiction, the wetlands delineated onsite would likely be considered Waters of the State under the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board 2019). As such, Mitigation Measures BIO-1, BIO-2, and BIO-9 are required to reduce this potential impact to less than significant.

Mitigation Measures

The following mitigation measures shall apply to the Proposed Project.

BIO-9: **Sensitive Natural Communities.** The Project site supports potential Waters of the U.S. and State. In addition to Mitigation Measures BIO-1 and BIO-2, the following mitigation measures are required for the protection of aquatic resources:

- Submit an aquatic resources delineation for the Project to the USACE and obtain a verification or Preliminary Jurisdictional Determination.
- File a request for authorization to fill Waters of the U.S. under the Section 404 of the federal CWA (Section 404 Permit) prior to discharging any dredged or fill materials into any Waters of the U.S. Mitigation measures will be developed as part of the Section 404 Permit process to ensure no net loss of wetland function and values. To facilitate such authorization, an application for a Section 404 Nationwide Permit (0.5 acre or less of impacts for Nationwide Permit 29-Residential Developments) or an Individual Permit for the Project should be prepared and submitted to USACE. Mitigation for impacts to Waters of the U.S. typically consists of a minimum of a 1:1 ratio for direct impacts; however final mitigation requirements will be developed in consultation with USACE.
- If necessary, file a request for a Water Quality Certification or waiver pursuant to Section 401 of the CWA must be obtained from the RWQCB for Section 404 permit actions.
- Pursuant to the Porter-Cologne Water Quality Act, a permit authorization from the RWQCB is required prior to the discharge of material in an area that could affect Waters of the State. Mitigation requirements for discharge to Waters of the State within the Project Site will be developed in consultation with the RWQCB.

Timing/Implementation: *Prior to grading and construction*

Monitoring/Enforcement: *Project proponent/City of Oroville Planning Division*

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

Impact BIO-4:	Project implementation could interfere substantially with the movement of any native resident or migratory fish or wildlife species with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
Impact Determination:	No Impact
Threshold:	*Substantial interference with the movement of any native resident or migratory fish or wildlife species with established native resident or migratory wildlife corridors or substantially impede the use of wildlife nursery sites.*

Impact Discussion

The Project Site does not have any creeks, rivers or lakes that would support migrating fish. The Project Site is surrounded by urban development on three sides, SR 3 to the north and I-5 to the west. There are no trees or shrubs present. Undeveloped dirt roads and a disced fire-break path surround the Study Area. The BRA completed for the Project Site determined that the Project would have no impacts to wildlife movement, corridors, or nursery sites. Therefore, the Project would result in no impact in this area.

Mitigation Measures

No mitigation measures are required.

Impact BIO-5:	Project implementation could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
Impact Determination:	No Impact
Threshold:	*Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

Impact Discussion

The Project Site does not have any trees. While the City does have policies protecting biological resources, the above analysis provides consistency with these policies and therefore, the Project would not conflict with these policies. The Project would have no impact in this area.

Mitigation Measures

No mitigation measures are required.

Impact BIO-6:	Project implementation could conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plans.
Impact Determination:	No Impact
Threshold:	*Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plans.*

Impact Discussion

There is no adopted HCP or other approved local, regional, or state habitat conservation plans at or near the Project Site. The Project would have no impact in this area.

Mitigation Measures

No mitigation measures are required.

3.2.16 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. While this is helpful for biological resources cumulative impacts, it does not necessarily provide a specific cumulative impact setting for these resources as the impacts to these resources are generally more site-specific. Therefore, the cumulative setting for biological resources includes the Project Site as well as the remaining undeveloped areas surrounding the Project Site where the impacts of urbanization and threats to biological diversity and sensitive biological resources are considered most serious. Cumulative impacts on biological resources are primarily the result of the area's urbanization, habitat fragmentation, water pollution, and conversion of natural land to residential, commercial, and recreational use.

3.2.16.1 Cumulative Impacts and Mitigation Measures

Impact BIO-7:	Would implementation of the proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the immediate area of the Proposed Project, result in the conversion of habitat and impact biological resources.
Impact Determination:	Less than cumulatively considerable
Threshold:	*Cumulatively result in the conversion of habitat and impact biological resources.*

Impact Discussion

Implementation of Mitigation Measures BIO-1 through BIO-8 will ensure impacts to special-status plant species are avoided. Mitigation Measure BIO-9 will reduce potential impacts to wetlands and sensitive natural communities though the development of the Proposed Project will act as a continuation of the existing commercialization and urbanization of the area. As discussed previously, the Project itself would cause few to no impacts to special-status species, riparian habitat or other sensitive natural communities, wetlands, or migratory wildlife. Implementation of Mitigation Measures BIO-1 through BIO-9 would reduce the only potential impacts to biological resources to a less than significant level. These factors have effectively reduced the Project's contribution to cumulative impacts. As a result, the Proposed Project would have a less than cumulatively considerable impact.

Mitigation Measures

No mitigation measures are required.

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3.3 Cultural Resources

This section evaluates the potential impacts of the Proposed Project on cultural resources. Cultural resources are defined as pre-contact (prehistoric) and historic sites, buildings, objects, structures, and districts or any other physical evidence associated with human activity considered important to a culture, or a community for scientific, traditional, or religious reasons. This section is based on the *Cultural Resources Inventory Report for the Feather Ranch Project* prepared by ECORP Consulting, Inc. (2022). The information provided below summarizes this report.

Due to the sensitive nature of cultural resources, which is restricted from public distribution by state and federal law, the cultural resources report is not included in the EIR appendices. Specific locations are not identified in the following analysis; however, all pertinent information necessary for impact determinations is included in this section.

While this section includes Native American pre-contact and historic information, TCRs (Section 3.14 of this Draft EIR) includes further analysis of the ethnography of the Project Site and potential Project impacts to TCRs.

3.3.1 Environmental Setting

The Project Site is located at the northeastern end of the Sacramento Valley at the foot of the Sierra Nevadas. The Feather River is 1.6 miles east of the Project Site. Thermalito Afterbay is 2.25 miles west. Thermalito Forebay is 0.6 mile north, at the foot of the Campbell Hills. The Oroville Wildlife Area, an open space wildlife preserve, is 1.5 miles southeast. Lake Oroville is 7 miles northeast. Elevations range from 190 to 230 feet AMSL.

The Project Site is an undeveloped lot on the western outskirts of the City of Oroville, with residential development to the north and east, undeveloped land to the west, and Oroville Municipal Airport to the south.

3.3.1.1 Regional Pre-Contact History

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found but cannot definitively be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (ECORP 2022).

Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around

5,000 BP, is sometimes referred to as the Millingstone Horizon. Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to 8,000 BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (ECORP 2022).

Archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments in sites dating to after about 5,000 BP. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. New peoples from the Great Basin began entering Southern California during this period. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before, and settlement became concentrated in villages and communities along the coast and interior valleys. Regional subcultures also started to develop, each with its own geographical territory and language or dialect. These were most likely the basis for the groups that the first Europeans encountered during the 18th century. Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction. The presence of small projectile points indicates the introduction of the bow and arrow into the region sometime around 2,000 BP (ECORP 2022).

3.3.1.2 Local Pre-Contact History

This section provides a regional overview with contextual elements drawn from California's Central Valley Region, the Western Foothills Region, and from the transition zone where the Project lies. There has been more extensive research and study of Central Valley pre-contact history than that of the Sierra Nevada foothill zone, but a fair amount of cultural overlap exists within these regions. This section includes the most recent and readily available research of both regions and includes some reference to the climactic changes that swept the Sierra Nevada and being a catalyst for population movement that led to cultural change in the foothills.

California's Great Central Valley has long held the attention of archaeologists and was a focus of early research in California. While archaeologists have used different definitions of cultural chronology over the years, the most recent sequence was redefined by J. Rosenthal, G. White, and Mark Sutton in their 2007 study, The Central Valley: A View from the Catbird's Seat, In *California Prehistory: Colonization, Culture, and Complexity*. This study's recalibrated sequence is divided into three broad periods: The Paleoindian Period (11,550 cal. BC to 8550 cal. BC); the three-staged Archaic period, consisting of the Lower Archaic (8550 cal. BC to 5550 cal. BC), Middle Archaic (5550 cal. BC to 550 cal. BC), and Upper Archaic (550 cal. BC to cal. AD 1100); and the Emergent Period (cal. AD 1100 to Historic). The three divisions of the Archaic Period correspond to climate changes. This is the most recently developed sequence and is now commonly used to interpret Central California prehistory. The aforementioned periods are characterized by the following:

Paleoindian Period

This period began when the first people began to inhabit what is now known as the California culture area. It was commonly believed these first people (i.e., hunters and gatherers) subsisted on big game and minimally processed foods, presumably with no trade networks. More recent research indicates these people may have been more sedentary, relied on some processed foods, and traded (Rosenthal et al. 2007). Populations consisted of small groups traveling frequently to exploit plant and animal resources.

Archaic Period

This period was characterized by an increase in plant exploitation for subsistence, more elaborate burial accoutrements, and increase in trade network complexity (ECORP 2022). The three divisions that correspond to pre-contact climate change are characterized by the following aspects (Rosenthal et al. 2007):

Lower Archaic Period—This period is characterized by cycles of widespread floodplain and alluvial fan deposition. Artifact assemblages from this period include chipped-stone crescents and early wide-stemmed points, marine shell beads, eastern Nevada obsidian, and obsidian from the north Coast Ranges. These types of artifacts found on the sites dating to this period indicate trade was occurring in multiple directions. A variety of plant and animal species were also utilized, including acorns, wild cucumber, and manzanita berries.

Middle Archaic Period—This period is characterized by a drier climate period. Rosenthal et al. (2007:153) identified two distinct settlement/subsistence patterns in this period: the Foothill Tradition and the Valley Tradition. Functional artifact assemblages consisting primarily of locally sourced flaked-stone and groundstone cobbles characterize the foothills tradition, while the Valley Tradition was generally characterized by diverse subsistence practices and extended periods of sedentism.

Upper Archaic Period—This period is characterized by abrupt change to wetter and cooler environmental climate conditions. Much greater cultural diversity is evident from this period. More specialized artifacts, such as bone tools, ceremonial blades, polished and groundstone plummets, saucer and saddle *Olivella* shell beads, *Haliotis* shell ornaments, and a variety of groundstone implements are characteristic of this period.

Emergent Period

This period is most notably marked by the introduction of the bow and arrow, the emergence of social stratification linked to wealth, and more expansive trade networks signified by the presence of clam disk beads that were used as currency. The Augustine pattern (the distinct cultural pattern of the Emergent Period) is characterized by the appearance of small projectile points (largely obsidian), rimmed display mortars, flanged steatite pipes, flanged pestles, and chevron-designed bird-bone tubes. Large mammals and small seeded resources appear to have made up a larger part of the diet during this period (ECORP 2022).

The following discussion summarizes the cultural patterns and the different local developments represented in archaeological deposits in the region surrounding the Project Site.

The Windmiller Pattern of the Early Horizon dates to the Middle Archaic (as defined by Rosenthal et al. 2007) and may be the most extensively studied of all the cultural patterns defined for the Central Valley. The temporal span for Windmiller has been updated and reanalyzed several times in the archaeological literature. Multiple authors over time have presented the characteristics to identify the Windmiller pattern (ECORP 2022). Most notable characteristics are:

- large, heavy stemmed and leaf-shaped projectile points commonly made of a variety of materials other than obsidian;
- perforate charmstones;
- *Haliotis* and *Olivella* shell beads and ornaments;
- trident fish spears;
- baked clay balls (presumably for cooking in baskets);
- flat slab milling stones;
- small numbers of mortars; and
- ventrally extended burials oriented toward the west.

The subsistence pattern of Windmiller groups probably emphasized hunting and fishing, supplementing it with collection of seeds (possibly including acorns) (ECORP 2022).

Windmiller groups acquired obsidian from at least two Coast Ranges and three trans-Sierran sources, *Haliotis* and *Olivella* shells and ornaments from the coast, and quartz crystals from the Sierra Nevada foothills. It is widely hypothesized that the bulk of these materials were acquired through trade; however, some may have been acquired as part of seasonal movements between the Central Valley and the Sierra Nevada foothills.

There is evidence for seasonal transhumance in the distribution of Windmiller artifacts, sites, and burial patterns. Archeological work along the edge of the Sierra Nevada foothills suggests a link between Windmiller groups of the Central Valley and the Sierra Nevada mortuary caves. In addition, analysis of Windmiller burial orientation and skeletal analyses suggest a high percentage of winter death among Windmiller groups. Incorporating all of this data, postulates that Windmiller groups were exploiting the foothills of the Sierra Nevada during the summer and returning in the winter to villages in the Central Valley as early as 4,000 BP.

The succeeding Middle Horizon, namely the Cosumnes Culture, which has much less-published material, discusses the patterns defined for this era than does Windmiller; nonetheless, some of the most notable characteristics are:

- tightly flexed burials with variable orientation;
- red ochre stains in burials;

- distinctive *Olivella* and *Haliotis* beads and ornaments;
- distinctive charmstones;
- cobble mortars and evidence of wooden mortars;
- numerous bone tools and ornaments;
- large, heavy foliate and lanceolate concave base projectile points made of materials other than obsidian; and
- objects of baked clay.

Further classification of the Middle Archaic into the Foothill Tradition and Valley Tradition helped to clarify the different types of cultural sequences, which occurred during these time periods. Functional artifact assemblages consisting primarily of locally sourced flaked-stone and groundstone cobbles characterize the Foothills Tradition, with very few trade goods. Sites that represent the Valley Tradition are much fewer in number and are generally characterized by much more diverse subsistence practices and extended periods of sedentism. Specialized tools, trade goods, and faunal refuse that indicate year-round occupation are evident on sites of the Valley Tradition. Distinct artifacts attributed to this tradition include one of the oldest dated shell bead lots in Central California and a particular type of pestle used with a wooden mortar.

The Sierra Nevada experienced significant climactic shifts and concomitant vegetation change throughout the Holocene, but pollen analysis and climactic records indicate that the current climate pattern and primary constituents of vegetation communities were in place by the Middle Archaic around 1,000 BC. Seasonal transhumance practiced by Indigenous populations of the Sierra may have become more consistent during this period of relative environmental stasis.

Paleobotanical analysis from sites of the Foothills Tradition confirm that acorns and pine nuts were preferred for subsistence. Sites near the Project Site associated with the Valley Tradition are rare in the early Middle Archaic (ca. 5,550 to 2,050 cal. BC). Sites associated with later portions of the Middle Archaic (post-2050 cal. BC) near the Project Site include elaborate material culture and diverse dietary and technological assemblages.

The next era in the region is identified as the Late Horizon, the Hotchkiss Culture, and the Augustine Pattern. The culture was formed by populations during the later Upper Archaic and Emergent periods and ranges in age from around 550 cal. BC to contact (dates vary between the different models of prehistory developed for the region). The Upper Archaic, as discussed above, corresponds with the late Holocene change in environmental conditions to a wetter and cooler climate. The Emergent Period and Late Horizon are markedly represented by the introduction of bow-and-arrow technology, as well as more pronounced cultural diversity as reflected in diversity of burial posturing, artifact styles, and material culture.

This era primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley. The Emergent Occupation (as defined by Rosenthal et al. 2007) coincides with the Augustine Pattern in the lower Sacramento Valley/Delta region, and with the Sweetwater and Shasta

complexes in the northern Sacramento Valley. The emergence of the Augustine Pattern appears to have been associated with the expansion of Wintun populations from the north, which appears to have led to an increase in settlements in the area after 550 BP.

During this period in the Sierra Nevada, paleoenvironmental data suggests severe droughts occurred from around AD 892 to 1112 and AD 1210 to 1350. These drier conditions surely affected the seasonal resource procurement rounds of the native populations during this time, and likely led to an influx of population movement and cultural blending into the foothills zone and Central Valley by Sierra Nevada groups.

Despite the varying designations, this emergent era is distinguished in the archaeological record by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead. Artifacts associated with the defined patterns (Augustine, Emergent, Hotchkiss) include bow-and-arrow technology (evidenced by small projectile points), mortars and pestles, and fish harpoons with unilaterally or bilaterally placed barbs in opposed or staggered positions. Mortuary patterns include flexed burials and cremations, with elaborate material goods found in association with prestigious individuals. A local form of pottery, Cosumnes brown ware, emerged in the lower Sacramento Valley. Human animal effigies are also a marker of this emergent era around the Project Site.

Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. The Viceroy of New Spain (Mexico) sent Cabrillo north to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port.

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay Area in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established. The Franciscan missionary friars established 21 missions in Alta California (the area north of Baja California) beginning with Mission San Diego in 1769 and ending with the mission in Sonoma established in 1823. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. No missions were established in the Central Valley. The nearest missions were in the vicinity of San Francisco Bay and included Mission San Francisco de Asis (Dolores) established in 1776 on the San Francisco Peninsula, Mission Santa Clara de Asis at the south end of San Francisco Bay in 1777, Mission San Jose in 1797, Mission San Rafael, established as an *asistencia* in 1817 and a full mission in 1823, and Mission San Francisco Solano in Sonoma in 1823. Presidios were established at San Francisco and Monterey. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. In 1827, American trapper Jedediah Smith traveled

along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers.

The Mexican government closed the missions in the 1830s and former mission lands, as well as previously unoccupied areas, were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or ranchos. During the Mexican Period there were small towns at San Francisco (then known as Yerba Buena) and Monterey. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento.

The American Period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the U.S. in 1848. As a result of the treaty, Alta California became part of the U.S. as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries, which were surveyed by the U.S. Surveyor General's office. Land outside the land grants became federal public land, which was surveyed into sections, quarter-sections, and quarter-quarter sections. The federal public land could be purchased at a low fixed price per acre or could be obtained through homesteading (after 1862).

Project Area History

The Project Site is situated in Butte County. Butte County was one of the original 27 counties in California and originally encompassed a much larger area than it does today. It was named for the landform now known as the Sutter Buttes, located in present-day Sutter County to the south. In the latter part of the 19th century, the County land was primarily agricultural, with timber and mineral lands encompassing less than half of the County area. Captain Luis A. Argüello led an expedition to the region in 1820 and was likely the earliest nonnative to explore the area. Fur trappers of the Hudson Bay Company followed and traversed the region as early as 1828. Other hunters and settlers in the Sacramento Valley began to travel on the Hudson Bay Trail to Oregon and then south to California. John Bidwell came to Sutter's Fort in California using this route. He mapped the upper reaches of the Sacramento Valley. People used Bidwell's maps to identify land when applying for land grants from the Mexican Government.

In 1844, Edward A. Farwell and Thomas Fallon settled on the Farwell Grant, which was to be the first settlement in Butte County. John Bidwell discovered gold on the Feather River two months after James Marshall's first gold discovery at Sutter's Mill in Coloma. This led to an influx of gold seekers to the area, and the river was lined with countless mining camps. Some of these camps grew to prosper into towns; others were short-lived.

The County of Butte was organized after California gained statehood and counties were established under the Act of February 18, 1850. Butte County originally included the majority of lands in what is now Lassen, Plumas, Tehama, Colusa, and Sutter counties, including the Sutter Buttes. The boundaries were reconfigured within the next few months.

The Project Site land is part of the 17,806-acre Rancho Fernandez Land Grant granted to Dionisio Zenon Fernandez and Máximo Zenon Fernandez by Mexican Governor Pio Pico in 1846. The land grant was located along the western bank of the Feather River and encompassed the area of today's Oroville and Thermalito.

The Project Site is located within the City of Oroville, which began as a mining camp in 1849 called Ophir City. John Bidwell discovered gold in the Feather River in 1848 and the town gained importance and population. By 1856, its name was changed to Oroville and became the county seat over Bidwell's Bar by popular election. It burgeoned into a trading hub for mining towns in the surrounding areas north and south along the Feather River. Mining operations were the main industry in Oroville and on the Feather River in the 1850s; the river was rerouted to mine the gravel bed.

By 1850, a sizable population had arrived along the banks of the Feather River to pan for gold and engage in traditional forms of placer mining. Later, hydraulic mining and dredging were used to mine less-accessible deposits. Dredge operators targeted heavy gold particles that had been washed down to the valley floor by annual precipitation events in the Sierra and deposited in sediments on the riverside flats near Oroville. Hydraulic mining continued to be the chief mining activity in the Oroville area until the 1880s, when it was outlawed due to the deleterious effect it had on the landscape and environment. The gold dredging industry replaced the hydraulic mining almost immediately. Dredge operators targeted heavy gold particles that had been washed down to the valley floor by annual precipitation events in the Sierras and deposited in sediments on the riverside flats near Oroville.

Dredging in the Oroville Wildlife Area began with Wendell Hammon, who had developed the first successful bucket-line dredge operation in California by 1898. This set off a chain of events that resulted in the operation of 35 dredges south of Oroville by 1908. The apogee of dredge mining operations in the Oroville Wildlife Area occurred between 1903 and 1916. Dredging activities waxed and waned over subsequent decades, eventually coming to a close in 1952. The DWR constructed the Oroville-Thermalito Complex in the 1960s, which involved the creation of the interior channels within the Oroville Wildlife Area and the perimeter berm along the southeast bank of the Feather River in the immediate area. The area was primarily used for aggregate (sand and gravel) extraction from 1952 to 1968, and construction of the Thermalito Afterbay was completed in 1968. In the 1960s, the construction of Oroville dam used tailings from the Oroville dredge fields as fill.

3.3.2 Regulatory Setting

3.3.2.1 Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires that the federal government list significant historic resources on the National Register of Historic Places (NRHP), which is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service (NPS) and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a historic district can also be included in the NRHP. The criteria for listing in the NRHP include resources that:

a) are associated with events that have made a significant contribution to the broad patterns of history;
b) are associated with the lives of persons significant in our past;
c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d) have yielded or may likely yield information important in prehistory or history.

3.3.2.2 State

California Register of Historical Resources

The State Historical Resources Commission designed the California Register of Historic Resources (CRHR) for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. This program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under CEQA.

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts to historical and archaeological resources is described in CEQA Guidelines Section 15064.5[a], [b]). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1).
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be *historically significant* if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1), including the following:
    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the CRHR, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC § 5024.1 and California Code of Regulations (CCR), Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial

integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicates that a project that follows the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, or the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995) is considered as mitigating impacts to a less than significant level.

As noted above, CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC § 21083.2(g) states:

> "Unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> – Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> – Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> – Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Treatment options under PRC Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Section 7050.5(b) of the California Health and Safety Code specifies protocol when human remains are discovered, as follows:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

CEQA Guidelines Section 15064.5(e) requires that excavation activities stop whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner

determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

In addition to the mitigation provisions pertaining to accidental discovery of human remains, the CEQA Guidelines also require that a lead agency make provisions for the accidental discovery of historical or archaeological resources, generally. Pursuant to Section 15064.5(f), these provisions should include:

> "an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

3.3.2.3 Local

Oroville 2030 General Plan

The Open Space, Natural Resources, and Conservation Element of the Oroville 2030 General Plan is dedicated to preserving and improving the quantity, quality, and character of open space in Oroville. The Element includes Section H, which addresses cultural resources in the City. Cultural resources in Oroville include both prehistoric and historic resources in the realms of archaeology, paleontology and historic structures, sites and areas that played important roles in local history. The following goals and policies from the Cultural Resources section of the Element pertain to Project development:

Goal OPS-14: Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

Policies

P14.1: Require consultation with the Northeast Information Center of the California Historical Resources Information System and completion of a records search as part of review of proposed development projects to determine whether the project site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources and the necessity of further investigation.

P14.2: Require applicants for projects identified by the Northeast Information Center as potentially affecting cultural resource sites or in need of further investigation to hire a consulting archaeologist or historian (as applicable) to conduct inventory and evaluation studies and develop a cultural resources mitigation plan and monitor the project to ensure that mitigation measures are implemented, as necessary.

P14.3: Require that areas found during construction to contain significant historic or prehistoric archaeologic artifacts be examined by a qualified consulting

archaeologist or historian for appropriate protection and preservation. Require that historic or prehistoric artifacts found during construction be examined by a qualified consulting archaeologist or historian to determine their significance and develop appropriate protection and preservation measures as necessary.

P14.7: If cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

P14.8: If human remains are located during any ground disturbing activity, work shall stop until the County Coroner has been contacted, and, if the human remains are determined to be of Native American origin, the NAHC and most likely descendant have been consulted.

P14.9: Encourage development to avoid impacts to burial sites including:

- *Designing or clustering development to avoid archaeological deposits that typically contain human remains and to avoid any known cemeteries or other concentrations of human remains.*
- *Dedicating permanent conservation easements if subdivisions and other developments can be planned to provide for such protective easements.*

3.3.3 Environmental Impacts

3.3.3.1 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, implementation of the Proposed Project would have a significant adverse impact on historical resources if it would result in any of the following:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

CEQA Guidelines Section 15064.5 defines *substantial adverse change* as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource is materially impaired.

CEQA Guidelines Section 15064.5(b)(2) defines *materially impaired* for purposes of the definition of substantial adverse change as follows:

> The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a Historical Resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

CEQA requires that alternative plans or mitigation measures must be considered if a project would result in an effect that may cause a substantial adverse change in the significance of a historical resource or would cause significant effects on a unique archaeological resource. Therefore, prior to assessing effects or developing mitigation measures, the Lead Agency must determine if a historical resource or unique archaeological resource is present that may be affected by the Project. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources and unique archaeological resources;
- Evaluate the significance of the potential historical resources; and
- Evaluate the effects of the project on eligible (significant) historical resources and unique archaeological resources.

3.3.3.2 Methods of Analysis

As a part of the Cultural Resources Inventory Report, ECORP requested a records search for the property at the Northeastern Information Center (NEIC) of the California Historical Resources Information System (CHRIS) at California State University, Chico on February 15, 2022. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800- meter) radius of the Proposed Project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. The records search was completed by NEIC staff and returned to ECORP on March 10, 2022. In addition to the official records and maps for archaeological sites and surveys in Butte County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for Butte County; The National Register Information System (NPS), California Historical Landmarks, California Historical Landmarks, California Points of Historical Interest, Directory of Properties in the Historical Resources Inventory, California Department of Transportation (Caltrans) Local Bridge Survey, Caltrans State Bridge Survey, and Historic Spots in California. (ECORP 2022)

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records. Historic maps reviewed include:

- 1856 BLM GLO Plat map for Township 19 North Range 3 East;
- 1891 U.S. Geological Survey (USGS) Chico, California topographic quadrangle map (1:250,000 scale);
- 1912 USGS Oroville, California topographic quadrangle map (1:31,680 scale);
- 1944 USGS Oroville, California topographic quadrangle map (1:62,500 scale);
- 1949 USGS Oroville, California topographic quadrangle map (1:62,500 scale); and
- 1970 (1973 edition) USGS Oroville, California topographic quadrangle map (1:24,000 scale).

ECORP reviewed historic aerial photos taken in 1952 and 1969 and more recent aerials from 1984, 1998, 2005, 2009, 2010, 2021, 2014, 2016, and 2018 for any indications of property usage and built environment. ECORP attempted a search within a local historical registry, but no such registry was available for Oroville.

Sacred Lands File Coordination Methods

In addition to the records search, ECORP contacted the California NAHC on February 16, 2022 to request a search of the Sacred Lands File for the Project Area. This search determines if the California Native American tribes within the Project Area have recorded Sacred Lands, because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of Tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding TCRs, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies have not delegated authority to ECORP to conduct Tribal consultation.

Other Interested Party Consultation Methods

ECORP mailed letters to the Butte County Historical Society on February 16, 2022 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

Field Methods

ECORP subjected the Project Area to an intensive pedestrian survey on March 18, 2022 under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties*using 15-meter transects. ECORP spent one person-day in the field. During the survey, ECORP archaeologists examined the ground surface for indications of surface or subsurface cultural resources. The archaeologists inspected the general morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the archaeologists examined the locations of subsurface exposures caused by factors such as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

3.3.3.3 Project Impacts and Mitigation Measures

Impact CUL-1:	**Project implementation would cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section15064.5.**
Impact Determination:	**Less than Significant with Mitigation**
Threshold:	*Substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?*

Impact Discussion

There were 17 previous cultural resource investigations conducted in or within a 0.5-mile radius of the property, covering approximately 80 percent of the total area surrounding the property within the records search radius. Of the 17 studies, four were conducted within the Project Area and the other 13 were within the 0.5-mile radius. The previous studies within the Project Area were conducted between 1979 and 2004 and vary in size from 27 to 118 acres.

The results of the records search indicate that 95 percent of the property has been previously surveyed for cultural resources; however, these studies were conducted in larger and smaller segments, at different times, by different consultants, between 18 and 43 years ago, and under obsolete standards. Therefore, ECORP conducted a pedestrian survey of the Area of Potential Effects (APE) for the Project under current protocols. Two of the past studies were conducted on the properties directly east and west of the Project Area and included a small portion of the Project Area. The four past studies did not result in the recording of cultural resources within the Project Area.

The records search also determined that seven previously recorded historic-era cultural resources are located within 0.5 mile of the Project Area. There are no previously recorded pre-contact resources within 0.5 mile of the Project Area. The previously historic-era resources included 1920s to 1940s structures, railroad and road grades, and the Oroville Division of the State Water Project facilities (Oroville Dam and Thermalito Forebay and Forebay Dam facilities). There are no previously recorded cultural resources within or adjacent to the Project Area.

ECORP's *Cultural Resources Inventory Report for the Feather Ranch Project* concluded that no historical resources were identified on the property as a result of the records search and field survey. Therefore, no known historical resources under CEQA will be affected by the Proposed Project. However, there always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. CEQA requires the lead agency to address any unanticipated historical resource discoveries during Project construction. Therefore, Mitigation Measure CUL-1 has been included to reduce the potential impact to historical resources to be less than significant with mitigation incorporated.

Mitigation Measures

The following mitigation measures shall apply to the Proposed Project.

CUL-1: Cultural or Archaeological Resource Discovery. All subdivision improvement plans and grading plans shall include the following:

- If subsurface deposits believed to be cultural or human in origin are discovered during any roadway or future construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:
- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City and landowner. If the find is determined to be eligible for inclusion in the NRHP or CRHR, the City shall consult on a finding of eligibility and implement appropriate treatment measures. Work may not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Butte County Coroner (in accordance with Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the

property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Oroville Planning Department and Project Construction Manager*

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

Impact CUL-2:	**Project implementation could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section15064.5.**
Impact Determination:	**Less than Significant with Mitigation**
Threshold:	*Substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?*

Impact Discussion

The *Cultural Resources Inventory Report for the Feather Ranch Project* concluded that archaeological resources were identified on the property as a result of the records search and field survey. Therefore, no known archaeological resources under CEQA will be affected by the Proposed Project. However, there always remains the potential for ground-disturbing activities to expose previously unrecorded archaeological resources. Therefore, Mitigation Measure CUL-1 has been included to reduce the potential impact to archaeological resources to be less than significant with mitigation incorporated.

Mitigation Measures

Implement Mitigation Measure CUL-1.

Residual Impact After Mitigation (note this section not needed if there are no mitigation measures)

Impacts would be less than significant after mitigation.

Impact CUL-3:	**Project implementation could disturb any human remains, including those interred outside of formal cemeteries.**
Impact Determination:	**Less than Significant with Mitigation**
Threshold:	*Disturbance of any human remains, including those interred outside of formal cemeteries.*

Impact Discussion

The *Cultural Resources Inventory Report for the Feather Ranch Project* indicates that there is little likelihood for burial sites to be present in the area. Regardless, there is a possibility of the unanticipated and accidental discovery of human remains during ground-disturbing Project-related activities. As such, Implementation of Mitigation Measure CUL-1 would assure that any discovery of human remains within the Project Area would be subject to these procedural requirements. Implementation of this mitigation measure would reduce impacts associated with the discovery/disturbance of human remains to be less than significant with mitigation incorporated.

Mitigation Measures

Implement Mitigation Measure CUL-1.

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

3.3.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. While this is helpful for cultural resources cumulative impacts, it does not necessarily provide a specific cumulative impact setting for these resources as the impacts to these resources are generally more site-specific. Therefore, the cumulative setting for cultural resources includes the Project Site as well as the remaining undeveloped areas surrounding the Project Site where the impacts of urbanization and potential for impacts to cultural resources are considered most serious. Cumulative impacts on cultural resources are primarily the result of the area's urbanization and conversion of undisturbed land to urban use. Developments and planned land uses, including the Proposed Project, would cumulatively contribute to impacts to known and unknown cultural resources in the area. As previously discussed, Section 3.3.1 Environmental Setting provides an overview of cultural resources and the history of the region.

3.3.4.1 Cumulative Impacts and Mitigation Measures

Impact CUL-4:	**Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative impacts to cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features)?**
Impact Determination:	**Less than Cumulatively Considerable**
Threshold:	*Result in cumulative impacts to cultural resources.*

Impact Discussion

As mitigated, the direct impacts associated with the Project will be reduced to a less than significant level. While it is possible that grading and development will result in the discovery of cultural resources, mitigation measures and state and federal laws already in place will set in motion actions designed to mitigate these potential impacts. The Project is adjacent to existing residential developments and vacant land. Future development of the area may also affect cultural resources. However, mitigation proposed in this section, and existing federal and state laws would reduce the Project's potential cultural resources impacts to a less than significant level. Therefore, the Project's impact is considered less than cumulatively considerable.

3.3.4.2 Cumulative Mitigation Measures

None required.

3.4 Energy

This section describes the environmental setting for energy, including the existing site conditions and regulatory setting, impacts that would result from the Proposed Project, and, if significant impacts are identified, the mitigation measures that would reduce these impacts. This section is a summary of the *Energy Consumption Assessment*, provided as an Appendix 3.4 to this DEIR.

3.4.1 Environmental Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (i.e., auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity. This analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

3.4.2 Energy Types and Resources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity, followed by renewables, large hydroelectric and nuclear (California Energy Commissions [CEC] 2022a). Pacific Gas & Electric Company (PG&E) provides electricity and natural gas to the City of Oroville. It generates or buys electricity from hydroelectric, nuclear, renewable, natural gas, and coal facilities. PG&E provides natural gas and electricity to most of the northern two-thirds of California, from Bakersfield and Barstow to near the Oregon, Nevada and Arizona state lines. It provides 5.2 million people with electricity and natural gas across 70,000 square miles. PG&E announced in 2019 that 100 percent of the company's delivered electricity comes from Greenhouse Gas (GHG) emission-free sources, including renewables, nuclear, and hydropower (PG&E 2019).

3.4.3 Existing Transmission and Distribution Facilities

The components of transmission and distribution systems include the generating facility, switching yards and stations, primary substation, distribution substations, distribution transformers, various sized transmission lines, and the customers. The United States contains over a quarter million miles of transmission lines, most of them capable of handling voltages between 115 and 345 kilovolts (kV), and a handful of systems of up to 500- and 765-kv capacity. Transmission lines are rated according to the amount of power they can carry, the product of the current (rate of flow), and the voltage (electrical pressure). Generally, transmission is more efficient at higher voltages. Generating facilities, hydro-electric dams, and power plants usually produce electrical energy at fairly low voltages, which is increased by transformers in substations. From there, the energy proceeds through switching facilities to the

transmission lines. At various points in the system, the energy is *stepped down* to lower voltages for distribution to customers. Power lines are either high voltage (115, 230, 500, and 765 kV) transmission lines or low voltage (12, 24, and 60 kV) distribution lines. Overhead transmission lines consist of the wires carrying the electrical energy (conductors), insulators, support towers, and grounded wires to protect the lines from lightening (called shield wires). Towers must meet the structural requirements of the system in several ways. They must be able to support both the electrical wires, the conductors, and the shield wires under varying weather conditions, including wind and ice loading, as well as a possible unbalanced pull caused by one or two wires breaking on one side of a tower. Every mile or so, a *dead-end* tower must be able to take the strain resulting if all the wires on one side of a tower break. Every change in direction requires a special tower design. In addition, the number of towers required per mile varies depending on the electrical standards, weather conditions, and the terrain. All towers must have appropriate foundations and be available at a fairly regular spacing along a continuous route accessible for both construction and maintenance. A right-of-way is a fundamental requirement for all transmission lines. A right-of-way must be kept clear of vegetation that could obstruct the lines or towers by falling limbs or interfering with the sag or wind sway of the overhead lines. If necessary, land acquisition and maintenance requirements can be substantial. The dimensions of a right-of-way depends on the voltage and number of circuits carried and the tower design. Typically, transmission line rights-of-way range from 100 to 300 feet in width. The electric power supply grid within Butte County is part of a larger supply network operated and maintained by PG&E that encompasses the entire Northern California region. This system ties into yet a larger grid known as the California Power Pool, which connects with the San Diego Gas and Electric and Southern California Edison companies. These companies coordinate the development and operation, as well as purchase, sale, and exchange of power throughout the State of California. Within Butte County, PG&E owns most of the transmission and distribution facilities.

The California Independent System Operator (CAISO) manages the flow of electricity across the high-voltage, long-distance power lines (high-voltage transmissions system) that make up 80 percent of California's and a small part of Nevada's grid. This nonprofit public benefit corporation keeps power moving to and throughout California by operating a competitive wholesale electricity market, designed to promote a broad range of resources at lower prices, and managing the reliability of the electrical transmission grid. In managing the grid, CAISO centrally dispatches generation and coordinates the movement of wholesale electricity in California. As the only independent grid operator in the western U.S., CAISO grants equal access to 26,000 circuit miles of transmission lines and coordinates competing and diverse energy resources into the grid where it is distributed to consumers. Every 5 minutes, CAISO forecasts electrical demand and dispatches the lowest cost generator to meet demand while ensuring enough transmission capacity for delivery of power.

CAISO conducts an annual transmission planning process that uses engineering tools to identify any grid expansions necessary to maintain reliability, lower costs or meet future infrastructure needs based on public policies. CAISO engineers design, run, and analyze complex formulas and models that simulate grid use under wide-ranging scenarios, such as high-demand days coupled with wildfires. This process includes evaluating power plant proposals submitted for study into the interconnection queue to determine viability and impact to the grid. The long-term comprehensive transmission plan, completed every 15 months, maps future growth in electricity demand and the need to meet state energy and

environmental goals that require the CAISO grid to connect to renewable-rich, but remote areas of the Western landscape. CAISO promotes energy efficiency through resource sharing. CAISO electricity distribution management strategy is designed so that an area with surplus electricity can benefit by sharing megawatts with another region via the open market. This allows the dispatch of electricity as efficiently as possible. By maximizing megawatts as the demand for electricity increases, CAISO helps keep electricity flowing during peak periods.

3.4.4 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh.

The electricity consumption associated with all residential uses in Butte County from 2017 to 2021 is shown in Table 3.5-1. As indicated, the demand has decreased since 2017.

Table 3.5-1. Residential Electricity Consumption in Butte County 2017-2021

Year	Electricity Consumption (kilowatt hours)
2021	757,195,036
2020	736,395,940
2019	662,643,253
2018	721,603,925
2017	764,450,593

Source: CEC 2022b

The natural gas consumption associated with all nonresidential uses in Butte County from 2017 to 2021 is shown in Table 3.5-2. As indicated, the demand has decreased since 2017.

Table 3.5-2. Residential Natural Gas Consumption in Butte County 2017-2021

Year	Natural Gas Consumption (therms)
2021	21,822,501
2020	21,816,990
2019	22,698,185
2018	24,989,481
2017	27,189,926

Source: CEC 2022b

Automotive fuel consumption in Butte County from 2017 to 2021 is shown in Table 3.5-3. Fuel consumption has decreased between 2018 and 2022.

Table 3.5-3. Automotive Fuel Consumption in Butte County 2018-2022

Year	Total Fuel Consumption (gallons)
2022	118,261,744
2021	118,122,078
2020	106,642,798
2019	121,842,862
2018	126,146,889

Source: CARB 2022

3.4.5 Regulatory Setting

3.4.5.1 State

Senate Bill 1389 Integrated Energy Policy Report

Senate Bill (SB) 1389 (Bowen, Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (PRC Section 25301a). The CEC prepares these assessments and associated policy recommendations every 2 years, with updates on alternate years, as part of the Integrated Energy Policy Report (IEPR).

The 2017 IEPR focuses on next steps for transforming transportation energy use in California. The 2017 IEPR addresses the role of transportation in meeting state climate, air quality, and energy goals; the transportation fuel supply; the Alternative and Renewable Fuel and Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; transportation energy demand forecasts; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure.

Executive Order B-55-18

In September 2018 Governor Edmund (Jerry) Brown Signed Executive Order (EO) B-55-18, which establishing a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net-zero carbon dioxide emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. EO B-55-18 requires CARB to "work

with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law SB 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the California Public Utilities Commission (CPUC).

The CEC has designed regulations that:

- establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour (Mwh). This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of GHG.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the Emissions Performance Standard (EPS) (Perata, Chapter 598, Statutes of 2006).

Renewable Energy Sources (Renewable Portfolio Standards)

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the CAISO into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by the 2045 RPS.

3.4.6 Environmental Impacts

3.4.6.1 Thresholds of Significance

CEQA Guidelines Appendix G states that a project may have a significant effect on the environment if implementation would result in any of the following:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency
- The impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment fuel necessary for Project construction, and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use. For the purpose of this analysis, the amount of electricity estimated to be consumed by the Project is quantified and compared to that consumed by all residential land uses in Butte County. Similarly, the amount of fuel necessary for Project construction and operations is calculated and compared to that consumed in Butte County.

3.4.6.2 Methods of Analysis

Construction- and operational-related energy consumption estimated to be consumed by the Project include the number of kWh of electricity and gallons of gasoline. Modeling was based on Project-specific information. The amount of total construction-related fuel used was estimated using ratios provided in the *Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1*. Electricity consumption estimates were calculated using the *California Emissions Estimator Model (CalEEMod*), version 2022.1 (Attachment A of Appendix 3.4, ECORP 2023). CalEEMod is a statewide land use computer model designed to quantify resources associated with both construction and operations from a variety of land use projects. Operational automotive fuel consumption has been calculated with EMFAC 2021, a mathematical model that was developed to calculate emission rates and rates of gasoline consumption from motor vehicles that operate on California's highways, freeways, and local roads.

3.4.6.3 Project Impacts and Mitigation Measures

Impact ENERGY-1:	Project implementation could result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction of operation.
Impact Determination:	Less than Significant.
Threshold:	*Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.*

Impact Discussion

The impact analysis focuses on the four energy sources relevant to the proposed Project: electricity natural gas, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. For the purpose of this analysis, the amount of electricity estimated to be consumed by the Project is quantified and compared to that consumed by all residential land uses in Butte County. Similarly, the amount of fuel necessary for Project construction and long-term operations is calculated and compared to that consumed in Butte County.

Table 3.5-4 summarizes energy consumption associated with the Proposed Project.

Table 3.5-4. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Building Energy Consumption		
Electricity Consumption[1]	1,509,195 kilowatt-hours	0.1993
Natural Gas Consumption[1]	29,077 therms	0.1332
Automotive Fuel Consumption (Gallons)		
Project Construction Year 1	34,778	0.0294
Project Construction Year 2	61,084	0.0516
Project Construction Year 3	60,000	0.0507
Project Construction Year 4	52,808	0.0447

Table 3.5-4. Proposed Project Energy and Fuel Consumption		
Energy Type	**Annual Energy Consumption**	**Percentage Increase Countywide**
Project Operations[3]	437,514	0.3699

Source: [1]CalEEMod; [2]Climate Registry 2016; [3]EMFAC2021 (CARB 2022)
Notes: The Project increases in electricity consumption are compared with all of the residential buildings in Butte County in 2021, the latest data available. The Project increases in construction and operations automotive fuel consumption are compared with the countywide fuel consumption in 2021, the most recent full year of data.

As shown in Table 3.5-4, the annual electricity consumption due to operations would be 1,509,195 kwH, resulting in a negligible increase (0.1993 percent) in the typical annual electricity consumption attributable to all residential uses in Butte County. This is potentially a conservative estimate since in September 2018 Governor Brown Signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net-zero carbon dioxide emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for GHG emission reduction. Governor's EO B-55-18 requires CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal." For these reasons, the Project would not result in the inefficient, wasteful, or unnecessary consumption of building energy.

Fuel necessary for Project construction would be required for the operation and maintenance of construction equipment and the transportation of materials to the Project Site. The fuel expenditure necessary to construct the physical building and infrastructure would be temporary, lasting only as long as Project construction. As further indicated in Table 3.5-4, the Project's gasoline fuel consumption during the one-time construction period is estimated to be 34,778 gallons over the course of the first year of construction, 61,084 gallons in the second year of construction, 60,000 gallons in the third year of construction, and 52,808 in the fourth year of construction. This would increase the annual construction related fuel use in the county by 0.0294 percent, 0.0516 percent, 0.0507, and 0.0447 percent, respectively. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and requiring recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

The Project is estimated to generate approximately 1,622 daily trips (KD Anderson & Associates, Inc. [KDA] 2023). As indicated in Table 3.5-4, this would result in the consumption of approximately 437,514 gallons

of automotive fuel per year, which would increase the annual countywide automotive fuel consumption by 0.3699 percent. This analysis conservatively assumes that all of the automobile trips projected to arrive at the Project during operations would be new to Butte County. Fuel consumption associated with the vehicle trips generated by the Project during operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. For these reasons, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Impact ENERGY-2:	Project implementation could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
Impact Determination:	Less than Significant.
Threshold:	*Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency.*

Impact Discussion

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The Project will be built to the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the CCR (Title 24). Title 24 was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately every 3 years; the 2019 Title 24 updates went into effect on January 1, 2020. The 2022 standards went into effect on January 1, 2023. The 2022 Energy Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2022 update to the Energy Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, encouraging better energy efficiency, strengthening ventilation standards, and more. The 2022 Energy Standards are a major step toward meeting Zero Net Energy. Buildings permitted on or after January 1, 2023 must comply with the 2022 Standards. Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments. Additionally, in January 2010, the State of California adopted the California Green Building Standards Code (CalGreen) that establishes mandatory green building standards for all buildings in California. The code was subsequently updated in 2013. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. With these building standards in place, the Project would not obstruct any state or local plan for renewable energy or energy efficiency. By building to be in compliance with Title 24 as well as the Green Building Standards Code, the Project achieves Goal OPS-17 of the City's Open Space, Natural

Resources, and Conservation Element of their General Plan, encouraging the conservation of energy resources and promoting green building. For these reasons, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

3.4.7 Cumulative Impacts

The cumulative setting associated with the Proposed Project includes approved, proposed, planned, and other reasonably foreseeable projects and development in the City of Oroville and Butte County. Developments and planned land uses, including the Proposed Project, would cumulatively contribute to impacts resulting in energy consumption. However, no other projects of this type are approved, proposed, planned, and other reasonably foreseeable at this time.

3.4.7.1 Cumulative Impacts and Mitigation Measures

Impact ENERGY-3:	Implementation of the proposed project, along with any foreseeable development in the project vicinity, could result in cumulative impacts to energy consumption.
Impact Determination:	Less than Significant.
Threshold:	*Cumulatively result in cumulative impacts to energy consumption?*

Impact Discussion

As previously described, the impact analysis contained herein focuses on the fuel consumption needed for Project implementation. As shown, Project fuel consumption would be negligible and would not be considered inefficient, wasteful, or unnecessary with regard to energy. Thus, the Proposed Project's impacts are considered less than considerable contribution to cumulative impacts regarding energy consumption.

Mitigation Measures

No mitigation measures are required.

3.5 Geology, Soils, and Paleontological Resources

The purpose of this section is to disclose and analyze the potential impacts associated with the paleontological resources of the Project Site.

The IS completed for the Proposed Project determined that there were no impact or a less than significant impact to the majority of subjects listed in the Geology and Soil impact areas. These include the following:

- Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving: the rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; and
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

As such, these subjects will not be discussed further in this section.

3.5.1 Environmental Setting

3.5.1.1 Paleontological Resources

A paleontological records search was completed using the University of California Museum of Paleontology (UCMP) Locality Search website on January 27, 2022. The search included a review of the institution's paleontology specimen collection records for Butte County, including the Project Site and vicinity. The purpose of the assessment was to determine the sensitivity of the Project Site, whether or not known occurrences of paleontological resources are present within or immediately adjacent to the Project Site, and whether or not implementation of the Project could result in significant impacts to paleontological resources. Paleontological resources include mineralized (fossilized) or unmineralized bones, teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

The results of the search of the UCMP indicated that 406 paleontological specimens were recorded from 318 identified localities and 88 unidentified localities in Butte County indicating that there is a potential for paleontological discoveries in the City. The vast majority of the fossilized remains are invertebrates, however, some plant fossilized remains are recorded for Butte County (UCMP 2022).

3.5.2 Regulatory Setting

3.5.2.1 Federal

Federal Land Policy and Management Act (43 USC 1701).

Federal law, including the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701), includes objectives such as the evaluation, management, protection, and location of fossils on Bureau of Land Management- (BLM) managed lands, defines fossils, and lays out penalties for the destruction of significant fossils. Also, National Environmental Policy Act (NEPA) requires the preservation of "historic, cultural, and natural aspects of our national heritage." Most recently, the Omnibus Public Lands Act refines NEPA and FLPMA guidelines and outlines minimum punishments for removal or destruction of fossils from federal and public lands.

Paleontological Resources Preservation Act.

The Paleontological Resources Preservation Act (PRPA, Title VI, Subtitle D in the Omnibus Public Lands Act of 2009, Public Law 111-011 directs the Secretaries of Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. With the passage of the PRPA, Congress officially recognized the importance of paleontological resources on federal lands by declaring that fossils from federal lands are federal property that must be preserved and protected using scientific principles and expertise.

Code of Federal Regulations, Title 43.

Under Title 43, CFR Section 8365.1-5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a *reasonable amount* of common invertebrate or plant fossils for non-commercial purposes is permissible (43 CFR 8365.1-5).

3.5.2.2 Local

City of Oroville 2030 General Plan

The Open Space, Natural Resources, and Conservation Element (Element) of the Oroville General Plan, adopted in 2015, is dedicated to preserving and improving the quantity, quality, and character of open space in Oroville. The Element includes Section H, which addresses cultural resources in the City. Cultural resources in Oroville include both prehistoric and historic resources in the realms of archaeology, paleontology and historic structures, sites and areas that played important roles in local history. The following goals and policies from the Cultural Resources section of the Element pertain to paleontological resources and Project development:

Goal OPS-14: Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

Policies

P14.5: Consult with qualified paleontologists to identify and protect Oroville's significant paleontological resources.

P14.7: If cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

3.5.3 Environmental Impacts

3.5.3.1 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this DEIR, implementation of the proposed project may have a significant adverse impact on paleontological resources if it would do any of the following:

- Project implementation could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.5.3.2 Methods of Analysis

For the purposes of this DEIR, information provided by the UCMP Locality Search website was analyzed to determine the potential for paleontological resources within the area of the Proposed Project. the search included a review of the institution's paleontology specimen collection records for Siskiyou County, including the Project Area and vicinity. In addition, a query of the UCMP catalog records, ECORP completed a review of regional geologic maps from the California Geological Survey, a review of local soils data, and a review of existing literature on paleontological resources of Butte County

3.5.3.3 Project Impacts and Mitigation Measures

Impact GEO-1	Project implementation could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
Impact Determination	Less than Significant with Mitigation
Threshold	*Direct or indirect destruction of a unique paleontological resource.*

Impact Discussion

As described above, a search of the UCMP failed to indicate the presence of paleontological resources in the areas potentially affected by construction activities for the Proposed Project. Although paleontological resource sites were not identified in the areas affected by the Project, there is a possibility that unanticipated paleontological resources will be encountered during ground-disturbing Project

construction activities. As such, this is considered a potentially significant impact requiring mitigation. Implementation of Mitigation Measure PALEO-1, addresses the potential discovery of previously unknown unique paleontological resources and implements actions to avoid impact to those resources. For this reason, the impact is considered less than significant with mitigation incorporated.

Mitigation Measures

The following mitigation measures shall apply to the Proposed Project.

PALEO-1: **Discovery of Unknown Paleontological Resources.** If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify the City. The Project proponent shall retain a qualified paleontologist to evaluate the find and to prescribe mitigation measures to reduce impacts to a less than significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Oroville Planning Department and Project Construction Manager*

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

3.5.4 Cumulative Impacts

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. While this is helpful for paleontological resources cumulative impacts, it does not necessarily provide a specific cumulative impact setting for these resources as the impacts to these resources are generally more site specific. Therefore, the cumulative setting for paleontological resources includes the Project Site as well as the remaining undeveloped areas surrounding the Project Site where the impacts of urbanization and potential for impacts to cultural resources are considered most serious. Cumulative impacts on cultural resources are primarily the result of the area's urbanization and conversion of undisturbed land to urban use. Developments and planned land uses, including the Proposed Project, would cumulatively contribute to impacts to known and unknown paleontological resources in the area. As previously discussed, Section 3.5.1 Environmental Setting provides an overview of paleontological resources of the region.

3.5.4.1 Cumulative Impacts and Mitigation Measures

Impact GEO-2	Would Implementation of the Proposed Project, along with any foreseeable development in the project vicinity, could result in cumulative impacts to paleontological resources?
Impact Determination	Less than Cumulatively Considerable
Threshold	*Result in cumulative impacts to cultural resources.*

Impact Discussion

The geologic area considered for the analysis of cumulative impacts related to paleontological resources is within the immediate Project vicinity. Temporary construction activities associated with the Proposed Project would involve construction activities such as trenching, excavation, and backfilling.

Cumulative impacts would only occur if other current or future projects in the area have the potential to cause, directly or indirectly, the impacts discussed above. The potential for impacts paleontological resources to occur during construction activities is less than significant with implementation of Mitigation Measure PALEO-1. Implementation of this mitigation measure would ensure that any potential impact on any previously unknown paleontological resources would be avoided. Therefore, the Proposed Project would have a less than considerable contribution to cumulative paleontological resources impacts.

Cumulative Mitigation Measures

None required.

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3.7 Hazards And Hazardous Materials

The purpose of this section is to disclose and analyze the potential impacts associated safety hazards related to a project located within an Airport Land Compatibility Use Plan (ALUCP).

The IS completed for the Proposed Project determined that there were no impact or a less than significant impact to the majority of subjects listed in the Hazards and Hazardous Materials impact areas. These include:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

As such, these subjects will not be discussed further in this section.

3.7.1 Environmental Setting

According to information provided by the Butte County Department of Development Services, Planning Division, Airport Land Use Commission (2022), approximately 35.82 acres of the Project Site is within the B1 Compatibility Zone and 9.15 acres of the Site is within the B2 Compatibility Zone.

The Butte County ALUCP uses compatibility policies to determine, in part, the various land uses surrounding the airport and the compatibility of these land uses with airport operations. These Compatibility Zones are listed as A, B1, B2, C, and D, with A being the most restrictive, identifying that all urban development is incompatible with airport operations, and zone D, the least restrictive, identifying that most urban development is compatible with airport operations. Section 3.2.2 of the ALUCP defines land use compatibility as follows:

> "3.2.2. *Land Use Compatibility Criteria:* The compatibility evaluations presented in Table 3A, *Basic Compatibility Criteria*, serve as the primary tool for determining whether a proposed *Land Use Action* is to be judged consistent with the Butte County ALUCP.

(a) Table 3A lists general land use categories and indicates each use as being either "Normally Compatible," "Conditional," or "Incompatible" depending upon the *Compatibility Zone* or *Zones* in which it is located. The individual evaluations in the cells of the table are based upon the *Density, Intensity* and *Open Land* criteria shown in the table header, and the ability of a typical *Land Use Action* in a particular category to meet all criteria. The evaluation terms are defined to mean the following:

(1) "Normally Compatible" means that normal examples of the use are presumed to comply with the noise, safety, airspace protection, and overflight criteria set forth in this Chapter. Atypical examples of a use may require review to ensure compliance with usage *Intensity*, lot coverage, and height limit criteria.

(2) "Conditional" means that the proposed land use is compatible if the indicated usage *Intensity*, open land, and other listed conditions are met. Complex projects with this determination may require more detailed evaluation using the specific noise, safety, airspace protection, and overflight compatibility policies set forth in Sections 3.3 through 3.6 and criteria for special circumstances outlined in Section 3.3 of this Chapter. For the purposes of these criteria, "avoid" is intended as cautionary guidance, not a prohibition of the use.

(3) "Incompatible" means that the use should not be permitted under any normal circumstances. Limited exceptions are possible for site-specific special circumstances."

Criteria for identifying Compatibility Zones is based on a number of factors, two of which are safety and noise.

The Butte County ALUCP identifies the safety compatibility policies background information in formulating the safety compatibility criteria for the various Compatibility Zones in the ALUCP. According to the ALUCP, the intent of land use safety compatibility policies is to minimize the risks associated with an off-airport aircraft accident or emergency landing. The policies focus on reducing the potential consequences of such events should they occur. Risks both to people and property in the vicinity of an airport and to people on board the aircraft are considered (Butte County Airport Land Use Commission [ALUC] 2017),

According to the ALUCP, the ALUCP evaluates the risk that potential aircraft accidents pose to lands and people around the airport in terms of two parameters: where aircraft accidents are most likely to occur near the airport and the potential consequences if an accident occurs in one of those locations.

- The accident likelihood is measured in terms of the geographic distribution of where accidents have historically occurred around other airports having similar types of activity. Because aircraft accidents are infrequent occurrences, the pattern of accidents at any one airport cannot be used to predict where future accidents are most likely to happen around that airport. Reliance must be placed on data about aircraft accident locations at comparable airports nationally, refined with respect to information about the characteristics of aircraft use at the individual airport.

- The consequences component of the risk considers the number of people in harm's way and their ability to escape harm. For most nonresidential development, potential consequences are measured in terms of the usage *Intensity*—the number of people per acre on the site. Local development standards (e.g., floor area ratios, parking requirements) and building code occupancies can be used to calculate nonresidential usage *Intensities*. For residential development, *Density*—the number of dwelling units per acre—is substituted for *Intensity*. Additional criteria are applicable to specific types of uses (Butte County ALUC 2017).

Additionally, the following factors are considered in setting safety compatibility policies in the ALUCP:

- The runway length, approach categories, normal flight patterns, and aircraft fleet mix at the airports. These factors are reflected in the Compatibility Zones shapes and sizes.
- The locations, delineated with respect to the *airport* runway, where aircraft accidents typically occur near airports and the relative concentration of accidents within these locations. The most stringent land use controls are applied to the areas with the greatest potential accident exposure. The risk information utilized is the general aviation accident data and analyses contained in the *California Airport Land Use Planning Handbook* (Handbook, Caltrans 2011). The Handbook guidance regarding safety compatibility forms the basis for the safety component of the composite *Compatibility Zones* established for the *Airports* and the maximum usage intensities (people per acre) criteria indicated in Table 3A, *Basic Compatibility Criteria*.
- Handbook guidance regarding residential densities in rural and suburban areas. Residential *Density* limitations cannot be equated to the usage *Intensity* limitations for nonresidential uses. Consistent with pervasive societal views and as suggested by the *Handbook* guidelines, a greater degree of protection is warranted for residential uses.
- The presence of *Risk-Sensitive Land Uses*—uses having characteristics that represent safety concerns regardless of the number of people present; specifically: vulnerable occupants (children, elderly, disabled), hazardous materials, and critical community infrastructure.
- The extent to which development covers the ground and thus limits the options of where an aircraft in distress can attempt an emergency landing.
- The extent to which the occupied parts of a *Project* site are concentrated in a small area. Concentrated high *Intensities* heighten the risk to occupants if an aircraft should strike the location where the development is concentrated. To guard against this risk, limitations on the maximum concentrations of dwellings or people in a small area of a large Project site are appropriate.

3.7.2 Regulatory Setting

3.7.2.1 State

State Aeronautics Act

Protection of the public and public interests in aeronautics and aeronautical progress was first established under the California State Aeronautics Act in 1967. which was codified under the Public Utilities Code Section 21001-21709. The purpose of this Act was, in part, to foster and promote safety in aeronautics, assure that persons residing in the vicinity of airports are protected to the greatest possible extent against intrusions by unreasonable levels of aircraft noise, and develop, in cooperation with the private sector, airport management, local jurisdictions, federal authorities, and the general public, informational programs to increase the understanding of current air transportation issues. This includes, but is not limited to, aviation safety, planning, airport noise, airport development and management, and the role of aviation in the economic development of the state, as an integral part of the state's transportation system.

Although the law has been amended numerous times since, the fundamental purpose of ALUCs to promote land use compatibility around airports has remained unchanged. As expressed in the present statutes, this purpose is:

> "...to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses (Butte County ALUC 2017).

The statutes give ALUCs two principal powers by which to accomplish this objective.

- To prepare and adopt an airport land use plan; and
- Review the plans, regulations, and other actions of local agencies and airport operators for consistency with that plan.

3.7.2.2 Local

Butte County Airport Land Use Compatibility Plan

The basic function of the Butte County ALUCP is to promote compatibility between the airports in Butte County and the surrounding land uses. As adopted by the ALUC, the ALUCP serves as a tool for use by the ALUC in fulfilling its duty under the California Public Utilities Code to review airport and adjacent land use development proposals. Additionally, the ALUCP sets compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances, as well as to land owners in new development design. The Oroville Municipal Airport is included in this plan.

Oroville 2030 General Plan

The Safety Element of the Oroville General Plan, adopted in 2015, provides information about risks in Oroville due to natural and human-made hazards and contains goals, policies, and actions designed to

protect the community and its property as much as possible from seismic hazards, flooding, fire, hazardous materials and electromagnetic fields. Section E of the Safety Element discusses airport operations and provides goals and policies regarding airport safety which pertain to Project development. Additionally, the General Plan Noise Element provides goals and polices related to airport noise. The Safety and Noise Elements goals and polices pertaining to the Project are as follows:

Safety Element

Goal SAF-5: Minimize risks associated with operations at the Oroville Municipal Airport.

Policies

P5.1: Maintain land use and development patterns in the vicinity of the Oroville Municipal Airport that are consistent with the adopted Airport Land Use Compatibility Plan, including setbacks and height requirements.

P5.2: Protect the Overflight Zone by limiting residential densities to a maximum of six units per gross acre, with proposals consisting of four units per gross acre or more subject to Airport Land Use Commission (ALUC) review. Schools and other uses resulting in "large concentrations" of people shall be prohibited.

Noise Element

Goal NOI-1: Minimize community exposure to excessive noise by ensuring compatible land uses relative to noise sources.

Policies

P1.10: When considering development proposals in the environs of the Oroville Municipal Airport, enforce the noise compatibility criteria and policies set forth in the adopted Butte County Airport Land Use Compatibility Plan. This includes restricting the development of residential or other noise sensitive receptor uses within the 55 dB CNEL noise contour around the Oroville Municipal Airport.

3.7.3 Environmental Impacts

3.7.3.1 Thresholds of Significance

The following airport-related thresholds of significance are based on Appendix G of the CEQA Guidelines. For the purposes of this EIR, implementation of the Proposed Project may result in a potentially significant impact associated with hazards and hazardous materials if it would do any of the following:

- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people reading or working in the Project Area.

3.7.3.2 Methods of Analysis

This impact analysis examines the potential for the construction and/or operation of the Proposed Project to result in release of hazardous materials into the environment. Implementation of the Project will comply with all applicable laws, permits, and legal requirements pertaining to hazards and hazardous materials, as discussed above.

3.7.3.3 Project Impacts and Mitigation Measures

Impact HAZ-1	If the Proposed Project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the Proposed Project could result in a safety hazard or excessive noise for people residing or working in the Project Area.
Impact Determination	Significant and Unavoidable
Thresholds	*Location within an airport land use plan or within two miles of a public airport or public use airport for which an airport land use plan has not been adopted, and presence of significant safety hazard or excessive noise for people residing or working in the Project area.*

Impact Discussion

The Project Site is within the B1 and B2 Compatibility Zones for the Oroville Municipal ALUCP. Residential uses in the B1 and B2 Compatibility Zones are categorized as conditional in the ALUCP. These Compatibility Zones allow residential development at densities of a maximum 0.1 unit per acre in the B1 zone and a maximum 0.2 unit per acre in the B2 zone (Butte County ALUC 2017). As such, residential densities of 0.1 unit per acre equates to 1 unit per 10 acres while 0.2 unit per acre equates to 1 unit per 5 acres. For those areas of the Project within the B1 zone, the Project's proposed density of 3.74 dwelling units per acre is inconsistent with the B1 compatibility zone density. For those areas of the Project within the B2 zone, the Project's proposed density of 4.15 dwelling units per acre is inconsistent with the B2 Compatibility Zone density.

The Butte County ALUCP illustrates the noise contours caused by airport operations surrounding the Oroville Municipal Airport in *Exhibit 6-4 Comparability Factors Map: Noise*. As shown, the Project is outside of the 55-, 60- and 65-dB CNEL noise contours. As such, airport operations would not result in excessive noise for people residing or working in the Project Area.

Based on the compatibility zone safety criteria discussed above and the location of the Proposed Project within the B1 and B2 zones, the Project would result in a potential safety hazard for people residing within the Proposed Project as the Project does not meet the density restrictions for the B1 and B2 Compatibility

Zones and the Compatibility Zones are based, in part, on safety factors considered in formulating Compatibility Zones.

Mitigation Measures

The only possible mitigation would be to either eliminate the use of the airport or move the Project to a location outside of the B1 and B2 Compatibility Zones. Neither of these mitigations are feasible. As such, there is no feasible mitigation possible to mitigate the potential airport safety impacts.

Residual Impact After Mitigation

Impacts would be significant and unavoidable.

3.7.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. While this is helpful for cumulative impacts regarding safety and airport operations, it does not necessarily provide a specific cumulative impact setting for these resources as the impacts to these resources are generally more site-specific. Therefore, the cumulative setting for hazards related to airport operations are projects located within the Compatibility Zones listed in the Oroville Municipal Airport ALUCP. This includes the Project Site as well as the remaining undeveloped areas surrounding the Project Site where the impacts of urbanization and potential for impacts to hazards from airport operations are considered most serious. Cumulative impacts on airport safety are primarily the result of the area surrounding the airport becoming more urbanized to the extent that the land use is considered incompatible with airport operations. As previously discussed, Section 3.7.1 Environmental Setting provides an overview of the existing airport land use Compatibility Zones of the Oroville Municipal Airport.

3.7.4.1 Cumulative Impacts and Mitigation Measures

Impact HAZ-2:	Would Implementation of the Proposed Project, along with any foreseeable development in the Project vicinity, result in cumulative impacts regarding safety hazard or excessive noise for people residing or working in the Project Area.
Impact Determination:	Cumulatively Considerable and Significant and Unavoidable
Threshold	*Result in cumulative impacts regarding airport safety hazards and/or excessive noise for persons residing or working in the project.*

Impact Discussion

As discussed previously, the Oroville Municipal Airport ALUCP identifies the acceptable land uses surrounding the airport by Compatibility Zones. The area considered for the analysis of cumulative impacts related to airport operations and safety are those areas within these airport Compatibility Zones.

The permitting of land uses that are not consistent with the Oroville ALUCP in these areas would increase the potential for cumulative impacts.

No other development projects that are inconsistent with the ALUCP have been proposed at this time. With the exception of the Proposed Project, which is requesting a General Plan land use designation change and rezoning, the current City of Oroville General Plan land use designations and zoning districts are consistent with the requirements of the Oroville ALUCP Compatibility Zones. Cumulative impacts would only occur if future projects would also request a land use designation and rezoning that is incompatible with the ALUCP. While this may never occur, the approval of the Proposed Project could set a precedent for future land use changes that may not be consistent with the ALUCP. However, while CEQA requires the mitigation of impacts, if possible, the only feasible mitigation would be to require that all future land development within the ALUCP area to be consistent with the ALUCP land uses. Neither the Project nor this Draft EIR has the authority to require the City of Oroville to implement and enforce this type of mitigation; therefore this mitigation would be infeasible. As such, the Project would have a cumulatively considerable and significant and unavoidable impact in this area.

Cumulative Mitigation Measures

No feasible mitigation possible.

Residual Impact After Mitigation

Impacts would be cumulatively considerable and significant and unavoidable.

3.8 Land Use And Planning

This section describes existing land uses on and near the Project Site. This section also describes plans and regulations pertaining to land use management in the Project Area and evaluates Project consistency with relevant land use plans, goals, and policies.

The IS completed for the Proposed Project determined that there were no impact to one of the two subjects listed in the Land Use impact areas. This includes:

- Physically divide an established community.

As such, this subject will not be discussed further in this section.

3.8.1 Environmental Setting

3.8.1.1 City of Oroville

Most households in Oroville reside in single-family dwelling units in the City. Within the city limits, single-family units are found mostly in the Historic Downtown, the Table Mountain Boulevard area, the Hammon Road area, and the Canyon Highlands area off of Oroville Dam Boulevard. Single-family parcels comprise approximately 1,338 acres in the City proper and approximately 5,600 acres in the City's Sphere of Influence (SOI). Multi-family units are scattered throughout the same areas as single-family neighborhoods, with a particular concentration of higher-density, multi-family buildings along the Table Mountain Boulevard corridor and the Oroville Dam Boulevard corridor. Multi-family parcels occupy 265 acres within the City limits. There are an additional 535 acres within the SOI. With few exceptions, multi-family residential buildings in the SOI consist of smaller projects that generally have less than five units. Mobile homes account for roughly 400 units within the Oroville City limits. Most are located in the City's 32 acres of mobile home parks. An additional 962 mobile home units are located within the 62 acres of mobile home parks in the SOI. Concentrations of mobile homes are located in Kelly Ridge and Thermalito.

Commercial uses in this category of existing land use include retail, office and service uses. There are 630 acres of land within the City limits in commercial use, with an additional 513 acres in Oroville's unincorporated SOI. Commercial and office uses are concentrated in four main areas: The Historic Downtown District, The Table Mountain Boulevard Corridor, The Feather River Boulevard Corridor, and the Oroville Dam Boulevard and Olive Highway area. Prevalent industrial uses include light manufacturing, heavy industrial, service and repair, processing and warehousing. There are currently approximately 416 acres in industrial use within the City limits, and approximate 336 acres in the SOI. Industrial uses are confined to two areas in the City of Oroville. The primary industrial zone in the City is located on the Southside, bounded by the Oroville Dam Boulevard on the north, the Western Pacific railroad tracks on the east, Ophir Road on the south, and Highway 70 on the west. Major uses include manufacturing, wood processing, and warehousing. The Airport Business Park is adjacent to OMA on the north and east. Uses include some light manufacturing/assembly operations as well as limited research and design

The Public/Quasi-Public category encompasses several types of uses, including all publicly owned parcels that are not parks or open space, and privately owned parcels that accommodate civic and institutional

uses such as churches and hospitals. Public and quasi-public uses account for approximately 1,122 acres within the City limits and 220 acres in the SOI. These include the OMA, City of Oroville government, Butte County Government Complex and institutional uses such as schools, hospitals, churches, cemeteries, and a fish hatchery. Parks and recreational facilities, such as playing fields and neighborhood parks, are fairly well distributed around the City, comprising 513 acres within the City limits. A few of the largest parks include River Bend Park (on Feather River), Mitchell Park (south of downtown), and Nelson Park and Recreational Center (north of Thermalito). Parks in Oroville provide a number of recreational opportunities for local residents, ranging from fishing, hiking, and river-rafting to sports fields and a new skate park near the Historic Downtown.

In addition to parks, Oroville has many open space resources that are protected by state agencies or conservation trusts. The 12,000-acre Oroville Wildlife Refuge is a riparian forest bordered by 12 miles of river channels and is important habitat for beavers, egrets, and river otters. Approximately 2,750 acres of the Oroville Wildlife Refuge are within the Planning Area. In addition to the Wildlife Area, the State of California manages a vast amount of land in the Lake Oroville State Recreation Area, including recreation areas and lands associated with the State Water Project, which begins at Oroville Dam and the Lake Oroville reservoir. South and North Thermalito Forebay comprise approximately 610 acres and Thermalito Afterbay is approximately 3,900 acres. Additionally, vacant land is defined as land with no structure or building improvement and that is not used for active agricultural production. Conversely, underutilized land is defined as land with the ability to accommodate additional density. Vacant land is interspersed throughout the City and comprises a significant portion of the Oroville area. Vacant land comprises 3,117 acres within the City limits and 5,805 acres of the land within the SOI. The average vacant parcel size is 2.83 acres. In addition to vacant land, underutilized land is also scattered throughout the City.

Agriculture is limited within the City limits of Oroville, accounting for only 17 acres. However, agriculture occupies approximately 1,563 acres of land within the SOI. Agricultural lands are typically used for field crops, orchards, and grazing. Grazing and pasture land account for most of the agriculture in the Oroville area, with much of the remainder is citrus and olive orchards. Small parcels of agricultural land can be found in Thermalito, as well as around Wyman Ravine in the southeast part of the SOI.

There are no Tribal lands within the City limits of Oroville, but one reserve is located in the SOI and another is located in the Planning Area. Both are anchored by casinos. Gold Country Casino occupies 92 acres in the SOI located off Olive Highway and is operated by the Tyme Maidu of Berry-Creek Rancheria. The Feather Falls Casino operated by the Concow Maidu of Mooretown Rancheria is located off Ophir Road, outside of the SOI but within the Planning Area (City of Oroville 2015).

3.8.1.2 Project Site

The 44.87-acre Site is within the City of Oroville 2030 General Plan land use designation of Airport Business Park and is zoned ABP with a zoning overlay of AIA-O. The 2030 General Plan identifies the Airport Business Park as follows:

> "This designation allows for light manufacturing, limited industrial, food processing, wholesale trade and offices. Retail businesses and public services are permitted to a lesser

> extent and would generally be allowed as an accessory use. Outdoor storage is only permitted in limited amounts if heavily screened. Projects must maintain architectural and landscape standards normally associated with the term "business park" rather than "industrial area." FAR range in this designation ranges from 0.20 to 0.35. Maximum FAR is 0.30 in the area bounded by Feather Avenue on the north, Oroville Dam Boulevard West on the south, 20th Street on the east and 24th Street on the west. Maximum FAR is 0.35 in all other areas (City of Oroville 2015)."

The Oroville Municipal Code Title 17 Zoning Section 17.36.030 ABP—Airport Business Park, describes the purpose APB zone as:

> "To provide for business and commercial opportunities near the Oroville Airport that will neither be detrimental to the airport's growth, efficiency and safety nor create substantial conflict with the development of other industrial lands in the city, and that will be consistent with the general plan land use designation of Airport Business Park (City of Oroville 2022a)".

Section 17.44.050 AIA-O—Airport influence area overlay, describes the intent of the AIA-O district as:

> "This section identifies limitations on the density, intensity, height, and other aspects of the use of property within the Oroville Municipal Airport (OMA) overflight area that are necessary to protect persons on the ground and in the air from adverse impacts that may result from operation of an airport, in the manner described in the 1990 Master Plan for the OMA. The limitations established in this section are consistent with Airport Compatibility Criteria described in the Butte County Airport Land Use Commission's 2000 Airport Land Use Compatibility Plan." (City of Oroville 2022a)

The Project Site is within B1 and B2 Compatibility Zones of the Butte County ALUCP for the Oroville Municipal Airport. Public Utilities Code Section 21676 requires the Oroville 2030 General Plan land use designations to be consistence with the land use plans and policies of the adopted ALUCP (City of Oroville 2015).

Existing Land Use

The Project is located at the southwest corner of 20th Street and Feather Avenue in the City of Oroville, California (Figures 1-1 and 1-2). The Proposed Project is located on approximately 44.89-acres of land identified as APN 030-230-098. The Project proposes to subdivide the 44.89-acre Project Site into 199 single-family lots. Current General Plan land use designation is Airport Business Park (ABP) and zoning district is Airport Business Park (ABP) with an Airport Influence Area Overlay (AIA-O). None of these designations allow the development of residential uses at the densities requested of 3.82 units/acre for the Proposed Project. Therefore, a General Plan amendment and rezone will be required to approve the Project. The Proposed Project includes a request to change the General Plan land use designation to Medium Low Density Residential and a rezoning to R-1. The Oroville Municipal Airport is approximately 0.75 mile to the south of the Project Site and a 0.5 mile to the north is the Thermalito Forebay. The Project

Site is within the B1 and B2 Compatibility Zones for the OMA ALUCP. These Compatibility Zones do not allow residential development at the densities proposed for the Project.

Surrounding Land Use

The Project is located directly southwest of the Feather Avenue/20th Street intersection in City of Oroville, California. (Figures 2-1 and 2-2). Figure 2-3 shows surrounding land uses as described below:

- *North*. The Site's northern boundary is generally bound by a dirt access road with vacant land and a scattering of single-family residences fronting 21st Street off Grand Avenue.
- *East.* The Site's eastern boundary is generally bound by 20th Street off Grand Avenue with a single-family residential neighborhood beyond the northern half of the eastern boundary; with vacant land beyond 20th Street on the southern half of the eastern boundary.
- *South.* The Site's southern boundary is generally bound by a dirt access road with vacant land and a scattering of single-family residences fronting 20th Street beyond. CA 162 is located approximately 1,570 feet from the Site's southern boundary where 20th Street Intersects. Beyond CA 162 (Oro Dam Boulevard West), and in the northeastern corner and abutting the OMA area, lies an industrial storage yard with commercial uses on either side and the Northwest Lineman College.
- *West*. The Project's western boundary is generally bound by a dirt access road with vacant land beyond and a scattering of single-family residences fronting Gold Country Lane and Chardonnay Way.

3.8.2 Regulatory Setting

3.8.2.1 State

California Planning and Zoning Law

The legal framework in which California cities and counties exercise local planning and land use functions is set forth in the California Planning and Zoning Law, Sections 65000 through 66499.58. Under State of California planning law, each city and county must adopt a comprehensive, long-term general plan. State law gives cities and counties wide latitude in how a jurisdiction may create a general plan, but there are fundamental requirements that must be met. These requirements include the inclusion of eight mandatory elements described in the Government Code: land use, circulation, housing, conservation, open space, noise, safety, and environmental justice (applicable to General Plans adopted or updated after January 1, 2018). Each of the elements must contain text and descriptions setting forth objectives, principles, standards, policies, and plan proposals; diagrams and maps that incorporate data and analysis; and mitigation measures.

To assist local governments in meeting this responsibility, the Governor's OPR is required to periodically revise guidelines for the preparation and content of local general plans pursuant to Government Code Section 65040.2. The General Plan Guidelines is advisory, not mandatory (ibid.). Nevertheless, it is the State's only official document explaining California's legal requirements for general plans. Planners,

decision-making bodies, and the public depend upon the General Plan Guidelines for help when preparing local general plans. The courts have periodically referred to the General Plan Guidelines for assistance in determining compliance with planning law. For this reason, the General Plan Guidelines closely adhere to statute and case law. It also relies upon commonly accepted principles of contemporary planning practice.

3.8.2.2 Local

Applicable land use plans, major policies and regulations that pertain to the Proposed Project are presented below.

Butte County Airport Land Use Compatibility Plan

The basic function of the Butte County ALUCP is to promote compatibility between the airports in Butte County and the surrounding land uses. As adopted by the ALUC, the ALUCP serves as a tool for use by the ALUC in fulfilling its duty under the California Public Utilities Code to review airport and adjacent land use development proposals. Additionally, the ALUCP sets compatibility criteria applicable to local agencies in the preparation or amendment of land use plans and ordinances and to land owners in their design of new development. This plan includes the OMA.

Oroville 2030 General Plan

The Land Use Element of the Oroville General Plan provides information about the future physical development of Oroville and is provided to preserve, protect and enhance the current livability and quality of life for Oroville's residents. The Land Use Element focuses on development that could potentially occur in both the existing City limits and the City's SOI.

The Safety Element of the Oroville General Plan provides information about risks in Oroville due to natural and manufactured hazards and contains goals, policies, and actions designed to protect the community and its property as much as possible from seismic hazards, flooding, fire, hazardous materials and electromagnetic fields. Section E of the Safety Element discusses airport operations and provides goals and policies regarding airport safety which pertain to Project development.

The General Plan goals and polices pertaining to land use and the Project are as follows:

Land Use Element

Goal LU-1: *Provide for orderly, well-planned, and balanced growth consistent with the limits imposed by infrastructure and the City's ability to assimilate new growth.*

Policies

P1.6: *Ensure all new development conforms to current land use and zoning designations.*

Goal LU-3: *Provide housing in a range of residential densities and types to address the housing needs of all segments of the community, including all income groups expected to reside in Oroville.*

Policies

P3.2: Promote the development of cohesive neighborhoods with distinct characters and with adequate park land and other neighborhood serving public facilities. For areas over 100 acres, the City may require the preparation of a Specific Plan.

P3.3: Discourage large residential development that has the look and feel of a single project; do not have variation in terms of densities, building typology and design, or lacks the distinct character of the surrounding neighborhood.

Safety Element

Goal SAF-5: Minimize risks associated with operations at the Oroville Municipal Airport.

Policies

P5.1: Maintain land use and development patterns in the vicinity of the Oroville Municipal Airport that are consistent with the adopted Airport Land Use Compatibility Plan, including setbacks and height requirements.

P5.2: Protect the Overflight Zone by limiting residential densities to a maximum of six units per gross acre, with proposals consisting of four units per gross acre or more subject to Airport Land Use Commission (ALUC) review. Schools and other uses resulting in "large concentrations" of people shall be prohibited.

3.8.3 Environmental Impacts

3.8.3.1 Thresholds of Significance

The following threshold of significance is based on Appendix G of the CEQA Guidelines. For purposes of this Draft EIR, implementation of the Proposed Project may have a significant adverse impact on land use and planning if it would:

- cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.8.3.2 Methods of Analysis

Review of all applicable land use plans, policies and/or regulations adopted by agencies with jurisdiction over the Project for the purpose of avoiding or mitigating an environmental effect were reviewed to determine if Project consistency would ensure impact avoidance. Mitigation is recommended to reduce the impact to less than significant if a significant environmental effect could occur due to Project inconsistency.

3.8.3.3 Project Impacts and Mitigation Measures

Impact LU-1	Project implementation could cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
Impact Determination	Less than Significant
Threshold	*Conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.*

Impact Discussion

As stated previously, The Project Site is within the City of Oroville 2030 General Plan land use designation of Airport Business Park and is zoned ABP with a zoning overlay of AIA-O. The Project proposes the development of 172 single-family lots. Single-family residential units are neither allowed in the APB zoning district nor are they a prescribed use in the General Plan land use designation of Airport Business Park, thus a General Plan amendment and rezone to a residential land use is required. Additionally, the Oroville Airport ALUCP of B1 and B2 Compatibility Zones only allows residential uses at one unit per ten acres for B1 and one unit per five acres for B2. The Proposed Project is inconsistent with the density requirements of both of these Compatibility Zones. However, the ALUCP Compatibility Zones, the General Plan land use designation, the City's zoning of ABP and overlay of AIA-O, and the General Plan Land Use and Safety Element goals and polices do not establish that these designations, goals, and policies were adopted for the purpose of avoiding or mitigating an environmental effect. The development of a residential project that is inconsistent with land use designations or policies does not establish that the Project would also be inconsistent with land use designations or policy unless it can be shown that these land use designations or policies were adopted for the purpose of avoiding or mitigating an environmental effect. That is not the case in this instance. Therefore, the Proposed Project would have a less than significant impacts in this area.

Mitigation Measures

No mitigation measures are required.

3.8.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. These General Plan projections are developed, in part, from the existing land use designations identified in the General Plan. As shown in Table 3-2, the anticipated growth in the City is expected to result in 9,685 new housing units, 7,026,000 sf of new industrial uses, and 12,168,000 sf of new commercial uses within the existing city limits by 2030.

3.8.4.1 Cumulative Impacts and Mitigation Measures

Impact LU-2-2	Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative significant environmental impact due to a conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
Impact Determination	*Less than Cumulatively Considerable*
Threshold	*Result in cumulative impacts to a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.*

Impact Discussion

The Proposed Project is the only pending, proposed or foreseeable project to request a land use designation change or rezoning within the Oroville Airport Compatibility Zones. As discussed previously, the Oroville 2030 General Plan identifies land use and safety goals and policies related to the OMA. However, none of these goals and policies were adopted for the purpose of avoiding or mitigating an environmental effect. Additionally, while the Proposed Project would result in a land use change to a higher density that what is consistent the B1 and B2 Compatibility Zones of the Oroville ALUCP, neither of these zones were adopted to avoid or mitigate an environmental effect. Therefore, the Proposed Project would result in a less than cumulatively considerable impact in this issue area.

Cumulative Mitigation Measures

No mitigation required.

3.9 Noise

This section describes the environmental setting for noise, including the existing site conditions, and presents a noise evaluation as a comparison of the Project's predicted noise levels and compares them to the noise standards promulgated by the City of Oroville General Plan Noise Element. More information can be found in the *Noise Impact Assessment for the Feather Ranch Project* (ECORP 2023, Appendix 3.9).

3.9.1 Environmental Noise and Groundborne Vibration Analysis

3.9.1.1 Fundamentals of Noise and Environmental Sound

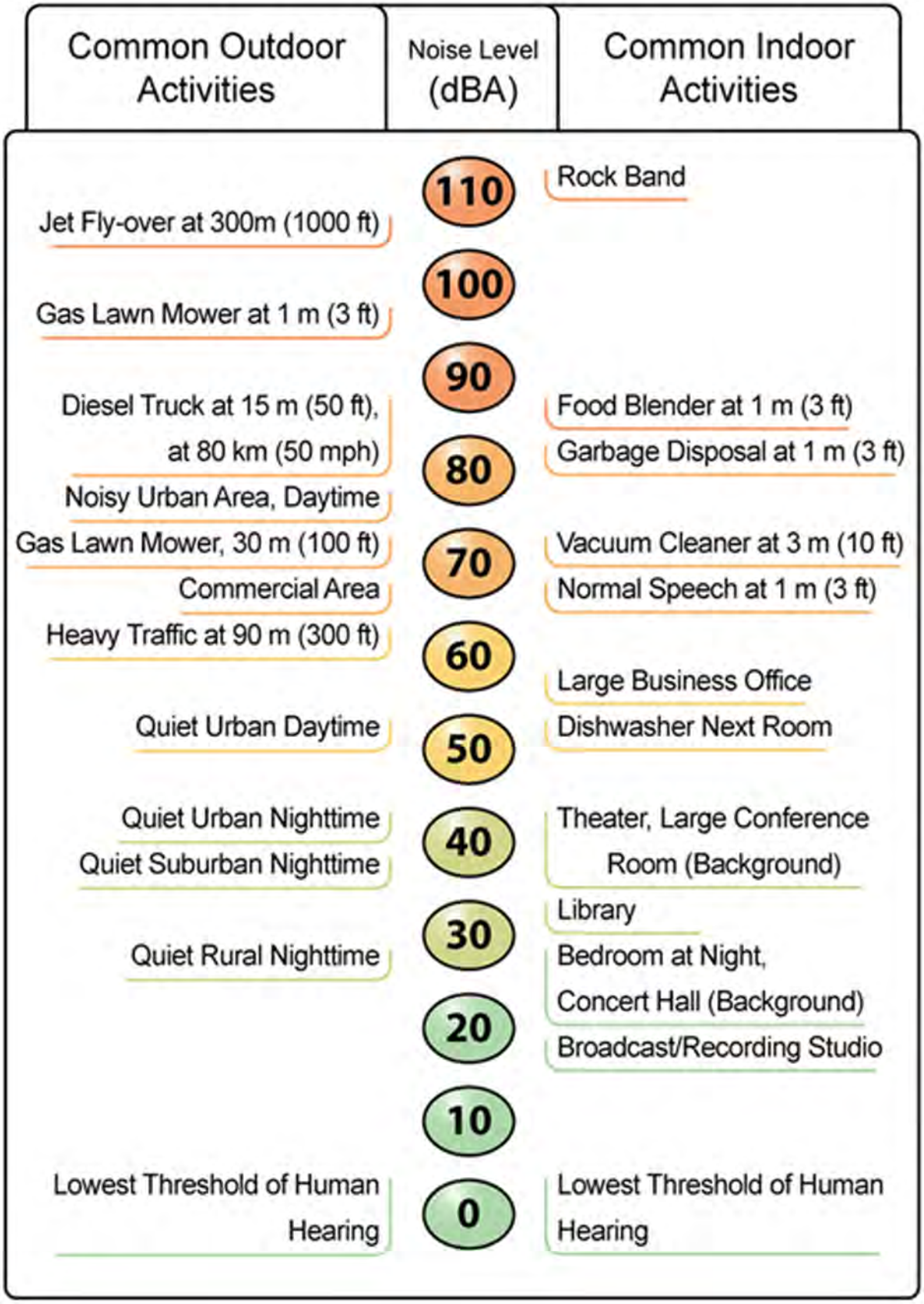
Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), 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. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Typical noise levels associated with common noise sources are depicted in Figure 3.9-1.

Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (Federal Highway Administration [FHWA] 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).



Source: California Department of Transportation (Caltrans) 2020a

Figure 3.9-1. Common Noise Levels

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the *line of sight* between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the *line of sight* between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. The STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations. In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following CBC methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they

deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA *weighting* added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 p.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Table 3.9-1 provides a list of other common acoustical descriptors.

Table 3.9-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, Leq	The average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Lmax, Lmin	The maximum and minimum A-weighted noise level during the measurement period.
L01, L10, L50, L90	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, Ldn or DNL	A 24-hour average Leq with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.

Table 3.9-1. Common Acoustical Descriptors

Descriptor	Definition
Community Noise Equivalent Level, CNEL	A 24-hour average Leq with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The dBA sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL or L_{dn} is below 60 dBA, moderate in the 60- to 70-dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-

commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- 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 community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these various sources.

3.9.1.2 Fundamentals of Noise and Environmental Sound

Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manufactured causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV); another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1-second period (FTA 2018).

Table 3.9-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 3.9-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earthmoving which requires the use of heavy-duty earth moving equipment.

Table 3.9-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Threshold at which there is a risk of architectural damage to extremely fragile historic buildings, ruins, ancient monuments
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Threshold at which there is a risk of architectural damage to fragile buildings. Virtually no risk of architectural damage to normal buildings
0.25	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to historic and some old buildings
0.3	96	Vibrations may begin to feel severe to people in buildings	Threshold at which there is a risk of architectural damage to older residential structures
0.5	103	Vibrations considered unpleasant by people subjected to continuous vibrations	Threshold at which there is a risk of architectural damage to new residential structures and Modern industrial/commercial buildings

Source: Caltrans 2020b

3.9.2 Existing Environmental Noise Setting

3.9.2.1 Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest noise sensitive receptors to the Project Site include residences directly adjacent to the northeast corner of the Project Site boundary, fronting 20th Street, approximately 75 feet distant.

3.9.2.2 Existing Ambient Noise Environment

Existing Ambient Noise Measurements

The Project Site is bound by a combination of vacant lands and large lot residences to the north, vacant land to the west, vacant lands and large lot residences to the south with Oroville Dam Boulevard and the OMA beyond, and a combination of vacant land and residences to the east. In order to quantify existing ambient noise levels in the Project Area, ECORP Consulting, Inc. conducted three short-term noise measurements as well as one long-term measurement on the morning of December 19th, 2022; the long-term measurement lasted from December 19 to 20, 2022 (Attachment A). The 15-minute measurements were taken between 1:18 p.m. and 2:17 p.m. The average noise levels of noise measured at each location are listed in Table 3.9-3.

Table 3.9-3. Existing (Baseline) Noise Measurements

Location Number	Location	CNEL dBA	L_{eq}	L_{min}	L_{max} dBA	Time
Long-Term Measurement						
Long Term 1	On Project Site	**43.1**	41.1	22.3	74.2	2:57 p.m. (12/19/22) – 2:57 p.m. (12/20/22)
Short-Term Measurements						
1	Adjacent to the residences southeast of the Project Site	N/A	**48.6**	27.6	76.8	1:18 p.m. – 1:33 p.m.
2	At the corner of 20th Street and Feather Avenue	N/A	**47.3**	26.1	72.8	1:41 p.m. – 1:56 p.m.
3	Adjacent to 1450 21st Street, north of the Project Site	N/A	**36.2**	26.8	53.2	2:02 p.m. – 2:17 p.m.

Source: Measurements were taken by ECORP Consulting, Inc. with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Attachment A for noise measurement outputs.

Notes: L_{eq} is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. L_{min} is the minimum noise level during the measurement period and L_{max} is the maximum noise level during the measurement period.

As shown, the existing noise level within the Project-vicinity currently ranges from 36.2 to 48.6 dBA L_{eq} over the course the three short-term noise measurements were taken in the Project vicinity, and the 43.1 dBA CNEL for the long-term measurement. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles) on area roadways.

Existing Roadway Noise Levels

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) (Attachment B) and traffic volumes from the Project's Traffic Impact Study (TIS) for the Feather Ranch

Project (KDA 2023). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data shows that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 3.9-4.

Table 3.9-4. Existing Roadway Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway (dBA)
18th Street		
North of Grand Avenue	Residential	42.0
Between Grand Avenue & Feather Avenue	Residential	52.4
Grand Avenue		
East of 18th Street	Residential	54.5
West of 18th Street	Residential	52.1
Oroville Dam Boulevard		
West of 20th Street/Larkin Road	Vacant & Agricultural	58.9
East of 20th Street/Larkin Road	Residential	62.9
Larkin Road		
South of Oroville Dam Boulevard	Vacant	53.1
20th Street		
Between Oroville Dam Boulevard & Biggs Avenue	Vacant & Agricultural	41.0
Between Biggs Avenue & Feather Avenue	Vacant & Residential	38.7
Feather Avenue		
East of 20th Street	Residential	36.3
Onyx Circle		
East of 20th Street	Vacant & Residential	34.5
Russel Proctor Way		
East of 20th Street	Vacant & Residential	35.7

Source: Traffic noise levels were calculated by ECORP using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KDA (2023). Refer to Attachment 3.9 for traffic noise modeling assumptions and results.

As shown, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 34.5 to 62.9 dBA L_{dn} at a distance of 100 feet from the centerline. As previously described, L_{dn} is a 24-hour average L_{eq} with a 10-dBA *weighting* added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. It should be noted that the modeled noise levels depicted in Table 3.9-4 may differ from measured levels in Table 3.9-3 because the measurements represent noise levels at various locations around the Project Site. The short-term measurements are also reported in a

different noise metric (e.g., short-term noise measurements are the L_{eq} values and traffic noise levels are reported in L_{dn}).

3.9.3 Regulatory Framework

3.9.3.1 Federal

Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 dBA over an 8-hour work shift (29 CFR 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

National Institute of Occupational Safety and Health

A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

3.9.3.2 State

State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the OPR, also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

California Department of Transportation

In 2020, Caltrans published the *Transportation and Construction Vibration Manual* (Caltrans 2020b). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage. Table 3.9-2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

3.9.3.3 Local

City of Oroville General Plan Noise Element

The Noise Element of the City of Oroville General Plan provides policy direction for minimizing noise impacts on the community. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noises, noise considerations will influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems.

The Noise Element sets various goals and policies that would apply to projects within Oroville. The following policy provisions are applicable to the Proposed Project:

Goal NOI-1: Minimize community exposure to excessive noise by ensuring compatible land uses relative to noise sources.

Policy P1.1: Include noise considerations in land use planning, transportation planning and project design decisions.

Policy P1.6: For transportation noise sources in the City of Oroville the increases in noise specified in Table 3.9-5 represents a significant increase in ambient noise.

Table 3.9-5. Significant Increase in Transportation Noise

Ambient Noise Level Without Project (L_{eq} or CNEL)	Significant Increase (dB)
< 60 dB	+5.0 or more
60 to 65 dB	+3.0 or more
> 65 dB	+1.5 or more

Source: City of Oroville 2015

Policy P1.7: Only allow land uses to exceed the noise exposure standards in Table 3.9-6 and Table 3.9-7 if the proposed use can be shown to serve the greater public interests of the citizens of Oroville.

Table 3.9-6. Maximum Allowable Noise Exposure to Transportation Noise Sources

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL (dB)	L_{dn}/CNEL (dB)	Leq (dB[2])
Residential	603	45	--
Transient Lodging	603	45	--
Hospitals, Nursing Homes	603	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	603	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Source: City of Oroville 2015
Note: -- = not applicable.
[1]Where the location of outdoor activity areas is unknown, the exterior noise-level standard shall be applied to the property line of the receiving land use.
[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.

Table 3.9-7. Maximum Allowable Noise Exposure to Non-Transportation Noise Sources

Land Use	Noise Level Descriptor	Exterior Noise Level Standard (Applicable at Property Line)		Interior Noise Level Standard	
		Daytime (7:00 a.m. – 10 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)	Daytime (7:00 a.m. – 10 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Residential	L_{eq}	50	45	40	35
	L_{max}	70	65	60	55
Transient Lodging, hospitals, nursing homes	L_{eq}	--	--	40	35
	L_{max}	--	--	60	35
Theaters, Auditoriums, Music Halls	L_{eq}	--	--	35	35

Table 3.9-6. Maximum Allowable Noise Exposure to Transportation Noise Sources

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[1]		Interior Spaces			
	L_{dn}/CNEL (dB)		L_{dn}/CNEL (dB)		Leq (dB^2)	
Churches, Meeting Halls	L_{eq}	--	--		40	40
Office Buildings	L_{eq}	--	--		45	--
Schools, Libraries	L_{eq}	--	--		45	--
Playgrounds, Parks	L_{eq}	65	--		--	--

Source: City of Oroville 2015
Note: Each of the noise levels specified above shall be lowered by 5dB for simple tone noises, which are noises consisting primarily of speech, music or recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwelling).

Policy P1.10: When considering development proposals in the environs of the Oroville Municipal Airport, enforce the noise compatibility criteria and policies set forth in the adopted Butte County Airport Land Use Compatibility Plan. This includes restricting the development of residential or other noise sensitive receptor uses within the 55 dB CNEL contour around the Oroville Municipal Airport.

Goal NOI-2: Reduce noise levels from sources such as domestic uses, construction, and mobile sources including motor vehicles and traffic.

Policy P2.2: Enforce provisions of the Community Noise Ordinance, which limits maximum permitted noise levels that cross property lines and impact adjacent land uses.

Policy P2.3: Limit noise generating construction activities located within 1,000 feet of residential uses to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays and non-holidays.

Policy P2.4: Require the following standard construction noise control measures to be included as requirements at construction sites in order to minimize construction noise impacts:

- *Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.*
- *Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.*
- *Utilize "quiet" air compressors and other stationary noise-generating equipment where appropriate technology exists and is feasible.*

- *The project sponsor shall designate a "noise coordinator" who would be responsible for responding to any local complaints about construction noise. The noise coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler) and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with information on the construction schedule and the telephone number for noise complaints.*

Policy P2.6: Support efforts to reduce vehicle and equipment noise, e.g. through fleet and equipment modernization or retrofits, use of alternative fuel vehicles and installation of mufflers or other noise reducing equipment.

3.9.3.4 City of Oroville Municipal Code

Chapter 9.20 of the City of Oroville Municipal Code (City of Oroville 2022a) contains the Noise Ordinance which places limits on noise levels as well as hours of construction. Regulations relevant to the Project are described below.

Chapter 9.20.060, Exceptions – Designated

- *Daytime Exceptions. Any noise source which does not produce a noise level exceeding 70 dBA at a distance of 25 feet from the source under its most noisy condition of use shall be exempt from the provisions of Sections 9.20.030, 9.20.040 and 9.20.050 between the hours of 7:00 a.m. and 9:00 p.m. daily except Saturdays, Sundays and holidays, when the exemption herein shall apply between 10:00 a.m. and 6:00 p.m.*
- *Safety Devices. Aural warning devices, which are required by law to protect the health, safety, and welfare of the community shall not produce a noise level more than 3 dB above the standard or minimum level as provided by state law.*
- *Construction and Alteration of Structures. Notwithstanding any other provisions of this chapter, between the hours of 7:00 a.m. and 9:00 p.m. daily except Saturdays, Sundays and holidays, when the exemption herein shall apply between 10:00 a.m. and 6:00 p.m., construction, alteration or repair of structures shall be allowed if it meets at least one of the following noise limitations:*

  1. *No individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible;*
  2. *The noise level at any point outside of the property plane of the project shall not exceed 86 dBA;*
  3. *The provisions of paragraphs 1 and 2 of this subsection shall not be applicable to impact tools and equipment, provided that on and after a date 6 months after the effective date of*

this chapter, such impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof and approved by the city's director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the city's director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he or she may determine to be in the public interest.

3.9.4 Environmental Impacts

3.9.4.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would produce the following:

1) Generation of 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.
2) Generation of excessive groundborne vibration or groundborne noise levels.
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.

For purposes of this analysis and where applicable, the City's noise standards established in the General Plan Noise Element and the Municipal Code were used for evaluation of Project-related noise impacts for construction and operations.

3.9.4.2 Methods of Analysis

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. In order to estimate the worst-case construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, predicted construction noise levels were calculated utilizing the FHWA's Roadway Construction Model (2006). Stationary noise sources are addressed qualitatively based on reference measurements taken by ECORP Consulting, Inc. The Project's contribution of traffic noise has been calculated with the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) coupled with traffic data provided by KDA (2023). Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels associated with construction equipment based on the Caltrans guidelines set forth above. Potential groundborne vibration impacts related to structural damage and human annoyance are evaluated, taking into account the distance from construction activities to nearby land uses.

An assessment of the noise/land use compatibility to locate sensitive noise receptors within the existing noise environment, was completed by conducting existing ambient baseline noise measurements around and adjacent to the Project Site with the use of a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute standard for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator.

3.9.4.3 Project Impacts and Mitigation Measures

Impact NOI-1	Project implementation could result in generation of 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.
Impact Determination	Significant and Unavoidable
Threshold	*Substantial increase in ambient noise levels in the project vicinity above levels existing without the project.*

Impact Discussion

Project Construction Noise

Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., building construction, paving). Noise generated by construction equipment, including earthmovers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive receptors in the vicinity of the construction site.

The nearest sensitive receptors to the Project Site include residences directly adjacent to the northeast corner of the Project Site boundary, fronting 20th Street, approximately 75 feet distant. As previously described, Section 9.20.60 of the City Municipal Code prohibits construction between the hours of 9:00 p.m. and 7:00 a.m. on weekdays and between 6:00 p.m. and 10:00 a.m. on Saturdays, Sundays and holidays. The City exempts construction noise from City noise standards so long as it does not exceed the

threshold of 86 dBA. Construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Additionally, construction would occur throughout the 44.97-acre Project site and would not be concentrated at one point. For the purposes of this analysis, the City's threshold of 86 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

The anticipated short-term construction noise levels generated for the necessary equipment were calculated using the Roadway Noise Construction Model for the site preparation, grading, building construction, paving and architectural coating phases. It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs the FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment operating simultaneously from the center of the Project Site (FTA 2018). In this case, the center of the Project Site is approximately 950 feet from the nearest sensitive receptor, the residences north of the Project Site.

The anticipated short-term construction noise levels generated for the necessary equipment is presented in Table 3.9-8.

Table 3.9-8. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level @950 feet (dBA)	Construction Noise Standards (dBA L_{eq})	Exceeds Standard at Nearest Receptor?
Site Preparation			
Rubber Tired Dozer (3)	52.1 (each)	*86*	No
Tractors/Loaders/Backhoes (4)	54.4 (each)	*86*	No
Combined Site Preparation Equipment:	**62.0**	*86*	No
Grading			
Excavator (2)	51.2(each)	*86*	No
Grader	55.4 dBA	*86*	No
Rubber Tired Dozer	52.1 dBA	*86*	No
Scraper (2)	54.0(each)	*86*	No
Tractors/Loaders/Backhoes (2)	54.4(each)	*86*	No
Combined Grading Equipment:	**62.6**	*86*	No
Building Construction, Paving, Architectural Coating			
Crane	47.0	*86*	No
Forklifts (3)	53.8(each)	*86*	No
Generator Set	52.0	*86*	No

Table 3.9-8. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level @950 feet (dBA)	Construction Noise Standards (dBA L_{eq})	Exceeds Standard at Nearest Receptor?
Tractors/Loaders/Backhoes (3)	54.4(each)	*86*	No
Welders	44.4	*86*	No
Paver (2)	48.6 (each)	*86*	No
Pavement Scarifier (2)	56.9 (each)	*86*	No
Roller (2)	47.4 (each)	*86*	No
Air Compressor	48.1	*86*	No
Combined Building Construction Equipment:	**64.9**	*86*	No

Source: Construction noise levels were calculated by ECORP Consulting, Inc. using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment C of Appendix 3.9 for Model Data Outputs.

Notes: Construction equipment used during construction derived from California Emissions Estimator Model (CalEEMod 2022.1). CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. The distance to the nearest sensitive receptor was calculated from the center of the Project Site (approximately 950 feet).

As shown in Table 3.9-8, no individual or cumulative pieces of construction equipment would exceed the 86 dBA construction noise threshold during any phase of construction at the nearby noise-sensitive receptors.

Offsite Construction Traffic Noise

Project construction would result in additional traffic on adjacent roadways over the period that construction occurs. According to the CalEEMod, which is used to predict air pollutant emissions associated with Project construction based on several construction surveys conducted in order to identify such parameters, including those generated by worker commute trips and vendor trips, the maximum number of construction workers and vendors traveling to and from the Project Site on a single day would be 80 (62 worker trips and 18 vendor trips). According to the California Department of Transportation (Caltrans) *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Project construction would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible.

3.9.4.4 Project Operational Noise

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals,

guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. As previously described, the nearest noise sensitive receptors are the residences located across from the Project Site.

Project Land Use Compatibility

The City of Oroville uses the land use compatibility table presented in the General Plan Noise Element which provides the City with a tool to gauge the compatibility of new land users relative to existing noise levels. This table, presented as Table 3.9-6, identifies acceptable exterior and interior noise levels for various land uses, including residential land uses such as those proposed by the Project. In the case that the noise levels identified at the Proposed Project Site fall within levels presented in the General Plan, the Project is considered compatible with the existing noise environment. As previously stated, the Project is proposing the construction of 172 single-family dwelling units.

The long-term noise measurement taken on the Project Site from December 19th to December 20, 2022, shown in Table 3-10.3, identifies an ambient noise level of 43.1 dBA CNEL. According to noise/land use compatibility table, presented in Table 3.9-6, this falls within the acceptable exterior noise level standard (≤60 dBA) and interior noise level standard (≤45 dBA) for residential land uses.

Additionally, a separate data point of ambient noise at the Project Site, as provided by the FHWA Highway Traffic Noise Prediction Model coupled with trip generation rates provided by KDA (2023), identifies existing traffic noise levels on the roadway directly adjacent to the Project Site (20th Street) as potentially reaching 39.2 – 46.6 dBA CNEL at 100 feet from the centerline.

As all of the measured and modeled noise levels fall below the acceptable noise standards, the Project Site is considered an appropriate noise environment to locate the proposed land use.

Project Operational Offsite Traffic Noise

Future traffic noise levels throughout the Project vicinity for the Proposed Project were modeled based on the traffic volumes identified by KDA (2023) to determine the noise levels along Project vicinity roadways. Table 3.9-9 shows the calculated offsite roadway noise levels under existing traffic levels compared to future buildout of the Project. The calculated noise levels as a result of the Project at affected land uses are compared to the appropriate City of Oroville numeric noise thresholds.

The City has identified a substantial increase for transportation noise exposure as follows:

- If the existing ambient noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA and the project creates a readily perceptible 5 dBA or greater noise level increase; or
- If the existing noise levels range from 60 to 65 dBA and the project creates a barely perceptible 3 dBA or greater noise level increase; or
- If the existing noise levels already exceed 65 dBA, and the project creates a community noise level increase of greater than 1.5 dBA.

Table 3.9-9. Proposed Project Predicted Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway (dBA)		City Noise Standard (dBA CNEL)	Exceed Standards?
		Existing Conditions	Existing + Project Conditions		
18th Street					
North of Grand Avenue	Residential	42.0	42.0	>5	No
Between Grand Avenue & Feather Avenue	Residential	52.4	53.7	>5	No
Grand Avenue					
East of 18th Street	Residential	54.5	55.7	>5	No
West of 18th Street	Residential	52.1	52.1	>5	No
Oroville Dam Boulevard					
West of 20th Street/Larkin Road	Vacant & Agricultural	58.9	59.1	>5	No
East of 20th Street/Larkin Road	Residential	62.9	63.9	>3	No
Larkin Road					
South of Oroville Dam Boulevard	Vacant	53.7	53.9	>5	No
20th Street					
Between Oroville Dam Boulevard & Biggs Avenue	Vacant & Agricultural	41.0	47.6	>5	**Yes**
Between Biggs Avenue & Feather Avenue	Vacant & Residential	38.7	46.7	>5	**Yes**
Feather Avenue					
East of 20th Street	Residential	36.3	45.3	>5	**Yes**
Onyx Circle					
East of 20th Street	Vacant & Residential	34.5	34.5	>5	No
Russel Proctor Way					
East of 20th Street	Vacant & Residential	31.5	31.5	>5	No

Source: Traffic noise levels were calculated by ECORP using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KDA (2023). Refer to Appendix 3.9 for traffic noise modeling assumptions and results.

As shown in Table 3.9-9, the roadway segments of 20th Street between Biggs Avenue and Feather Avenue and between Biggs Avenue and Oroville Dam Boulevard would experience an increase of more than 5.0 dBA CNEL over existing conditions, which is beyond the City of Oroville noise standard. Similarly, the segment of Feather Avenue east of 20th Street would also experience an increase of more than 5.0 dBA CNEL over existing conditions. There is no feasible mitigation available to reduce these impacts to less than significant. Lead agencies have limited remedies at their disposal to effectively reduce traffic-related noise. Addressing traffic noise at the receiver rather than the source usually takes the form of noise barriers (i.e., sound walls). While constructing noise barriers along streets would reduce noise, the placement of sound walls between existing residences/businesses and local roadways would not be desirable as it would conflict with the community's aesthetic, design and character and is therefore deemed infeasible. Furthermore, such barriers would likely require property owner approval, which cannot be ensured. While measures such as encouraging ridesharing, carpooling, and alternative modes of transportation could reduce vehicle volumes, such measures can neither be mandated of residents nor have been shown to reduce vehicle trips to the extent needed to reduce vehicle noise levels below established thresholds. Therefore, no feasible mitigation measures exist to reduce the identified significant impact.

Operational Stationary Noise

As previously described, the Project is proposing the construction of 172 single-family dwelling units. Therefore, the main onsite stationary noise sources related to long-term operation on the Project Site would be from the proposed residences. ECORP staff regularly conduct noise measurements within various land uses, at specific noise-generating events, and at individual pieces of noise-generating equipment in order to develop a wide sampling of potential noise levels associated with such. The main noise source generated from the residences on the Project Site would include mechanical equipment and other typical sources specific to residential neighborhoods such as barking dogs, internal traffic circulation, radios, and people talking. According to previous field noise measurements conducted by ECORP, mechanical heating, ventilation, and air conditioning equipment generates noise levels less than 45 dBA at 20 feet. This noise level is less than the City's daytime and nighttime noise standards for residential properties.

The Project proposes to place residential uses adjacent to existing residential uses. The most basic planning strategy to minimize adverse impacts on new land uses due to noise is to avoid designating certain land uses at locations within the community that would negatively affect noise sensitive land uses. The Project is consistent with the types, intensity, and patterns of land use envisioned for the Project Area, and as previously described, the Project is considered compatible with the existing noise environment. Operation of the Project would not result in a significant noise-related impact associated with onsite sources.

Mitigation Measures

Impacts are significant and unavoidable as a result of traffic noise related to the Project. As discussed previously, there is no feasible mitigation available to reduce these impacts to less than significant.

Residual Impact After Mitigation

Impacts would be significant and unavoidable.

Impact NOI-2:	Project implementation could generate excessive groundborne vibrations and groundborne noise during construction.
Impact Determination:	Less than Significant
Threshold:	*Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*

Impact Discussion

Construction-Generated Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 3.9-10.

Table 3.9-10. Representative Vibration Source Levels for Construction Equipment

Equipment Type	PPV at 25 Feet (inches per second)
Large Bulldozer	0.089
Pile Driver	0.170
Caisson Drilling	0.089
Loaded Trucks	0.076
Rock Breaker	0.089

Table 3.9-10. Representative Vibration Source Levels for Construction Equipment	
Equipment Type	**PPV at 25 Feet (inches per second)**
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: Caltrans 2020b; FTA 2018

The City of Oroville does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020b) recommended standard of 0.3 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction site is a portable office located east of the Project Site.

Based on the representative vibration levels presented for various construction equipment types in Table 3.9-10 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$PPVequip = PPVref \times (25/D)^{1.5}$$

Table 3.9-11 presents the expected Project related vibration levels at a distance of 60 feet.

Table 3.9-11. Construction Vibration Levels at 60 Feet									
Receiver PPV Levels (inches/second)[1]							**Peak Vibration**	**Threshold**	**Exceed Threshold**
Large Dozer	**Pile Driver**	**Drilling & Rock Breaker**	**Loaded Trucks**	**Roller**	**Jack-hammer**	**Small Dozer**			
0.024	0.046	0.024	0.020	0.057	0.009	0.001	0.057	*0.3*	**No**

As shown, groundborne vibrations attenuate rapidly from the source due to geometric spreading and material damping. Geometric spreading occurs because the energy is radiated from the source and spreads over an increasingly large distance while material damping is a property of the friction loss which occurs during the passage of a vibration wave. As shown in Table 3.9-11, the nearest structure 60 feet from the construction site would not experience groundborne levels in exceedance of standards.

Operational Groundborne Vibration

Project operations would not include the use of any stationary equipment that would result in excessive groundborne vibration levels.

Mitigation Measures

No mitigation measures are required.

Impact NOI-3:	If the Proposed Project is 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, the Proposed Project could expose people residing or working in the project area to excessive noise levels.
Impact Determination:	Less than Significant
Threshold:	*Exposure of excessive noise levels to people residing or working in the Project area due to proximity to an airport.*

Impact Discussion

The OMA is the closest airport to the Project Site and is located approximately 0.5 mile away. The Project is in compliance with Policy P1.10 of the City's Noise Element, as the Project Site is located outside of the 55 dBA CNEL contour around the OMA. Thus, implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people working at or visiting the Project Site to aircraft noise.

Mitigation Measures

No mitigation measures are required.

3.9.5 Cumulative Impacts and Mitigation Measures

Impact NOI-4:	Would implementation of the Proposed Project, in combination with existing, approved, proposed, and reasonably foreseeable development in Butte County, result in a cumulatively considerable noise impact?
Impact Determination:	Cumulatively considerable
Threshold:	*Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative impacts related to noise?*

Cumulative Construction Noise

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily

affect the areas immediately adjacent to the construction site. Construction noise for the Proposed Project was determined to be less than significant following compliance with the City's construction noise threshold. Cumulative development in the vicinity of the Project Site could result in elevated construction noise levels at sensitive receptors in the Project Area. However, each project would be required to comply with the applicable noise limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Cumulative Onsite Operational Noise

Cumulative long-term noise sources associated with development at the Project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. Considering the Proposed Project is located across from existing residential uses, the Project would not result in any substantial changes in the noise environment due to onsite sources. Noise increase as a result of the Project would not exceed City standards. Therefore, the Project would not contribute to cumulative impacts during operations.

Cumulative Traffic Noise

Cumulative traffic noise levels throughout the Project vicinity (i.e., vicinity roadway segments that traverse noise-sensitive land uses) were modeled based on the traffic volumes identified by KDA (2023) to determine the noise levels along Project vicinity roadways. Table 3.9-12 shows the calculated offsite roadway noise levels under cumulative conditions without the Project (Cumulative No Project) compared to cumulative conditions plus future buildout of the Project (Cumulative Plus Project).

The calculated noise levels as a result of the Project at affected land uses are compared to the appropriate City numeric noise thresholds for evaluating the impact of increased traffic noise. The City's measure of substantial increase for transportation noise exposure is as follows:

- If the existing ambient noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA CNEL and the project creates a readily perceptible 5 dBA CNEL or greater noise level increase; or
- If the existing noise levels range from 60 to 65 dBA CNEL and the project creates a barely perceptible 3 dBA CNEL or greater noise level increase; or

If the existing noise levels already exceed 65 dBA CNEL, and the project creates a community noise level increase of greater than 1.5 dBA CNEL.

Table 3.9-12. Cumulative Traffic Scenario

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway(dBA)		City Noise Standard (dBA CNEL)	Exceed Standards?
		Cumulative No Project	Cumulative + Project		
18th Street					

Table 3.9-12. Cumulative Traffic Scenario					
North of Grand Avenue	Residential	42.7	42.7	*>5*	**No**
Between Grand Avenue & Feather Avenue	Residential	53.9	54.8	*>5*	**No**
Grand Avenue					
East of 18th Street	Residential	56.4	57.1	*>5*	**No**
West of 18th Street	Residential	54.1	54.2	*>5*	**No**
Oroville Dam Boulevard					
West of 20th Street/Larkin Road	Vacant & Agricultural	59.4	59.5	*>5*	**No**
East of 20th Street/Larkin Road	Residential	65.9	66.0	*>3*	**No**
Larkin Road					
South of Oroville Dam Boulevard	Vacant	57.4	57.4	*>5*	**No**
20th Street					
Between Oroville Dam Boulevard & Biggs Avenue	Vacant & Agricultural	44.0	48.4	*>5*	**No**
Between Biggs Avenue & Feather Avenue	Vacant & Residential	41.3	47.1	*>5*	**Yes**
Feather Avenue					
East of 20th Street	Residential	39.3	45.5	*>5*	**Yes**
Onyx Circle					
East of 20th Street	Vacant & Residential	36.3	36.3	*>5*	**No**
Russel Proctor Way					
East of 20th Street	Vacant & Residential	32.7	32.7	*>5*	**No**

Source: Traffic noise levels were calculated by ECORP using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KDA (2023). Refer to Attachment B for traffic noise modeling assumptions and results.

As shown in Table 3.9-12, the roadway segment of 20th Street between Biggs Avenue and Feather Avenue would experience an increase of more than 5.0 dBA CNEL over existing conditions, which is beyond the City of Oroville noise standard. Additionally, the segment of Feather Avenue east of 20th Street would also experience an increase of more than 5.0 dBA CNEL over existing conditions. As previously described, there is no feasible mitigation available to reduce these impacts to less than significant. Lead agencies have

limited remedies at their disposal to effectively reduce traffic-related noise. Addressing traffic noise at the receiver rather than the source usually takes the form of noise barriers (i.e., sound walls). While constructing noise barriers along streets would reduce noise, the placement of sound walls between existing residences/businesses and local roadways would not be desirable as it would conflict with the community's aesthetic, design and character and is therefore deemed infeasible. Furthermore, such barriers would likely require property owner approval, which cannot be ensured. While measures such as encouraging ridesharing, carpooling, and alternative modes of transportation could reduce vehicle volumes, such measures can neither be mandated of residents nor have been shown to reduce vehicle trips to the extent needed to reduce vehicle noise levels below established thresholds. Therefore, no feasible mitigation measures exist to reduce the identified significant impact.

Cumulative Mitigation Measures

No feasible mitigation possible.

Residual Impact After Mitigation

Impacts would be cumulatively considerable and significant and unavoidable.

3.10 Population and Housing

This section describes the environmental setting for population and housing, including the existing Site conditions and regulatory setting, impacts that would result from the Proposed Project, and, if significant impacts are identified, the mitigation measures that would reduce these impacts.

The IS completed for the Proposed Project determined that there were no impact to one of the two subjects listed in the Population and Housing impact areas. This includes:

- Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

As such, this subject will not be discussed further in this section.

3.10.1 Environmental Setting

According to the DOF, which provides estimated population and housing unit demographics by year throughout the state, the City's population increased 21.3 percent between 2010 and 2022, from 15,546 to 18,863. DOF estimates that there were 7,783 total housing units in the City in 2022, up from 6,194 in 2010 (DOF 2020). As of January 1, 2022, the City had a 7.1 percent vacancy rate (DOF 2022). As shown in Table 3-2, there are anticipated to be 9,685 residential dwelling units within City boundaries by 2030.

Currently, the Project Site is vacant land. No current housing exists on the Site.

3.10.2 Regulatory Setting

3.10.2.1 State

California General Plan Law

California General Plan Law California Housing Element law (Government Code Sections 65580 to 65589.8) includes provisions related to the requirements for housing elements of local government General Plans. Among these requirements are an assessment of housing needs and an inventory of resources and constraints relevant to meeting these needs. Additionally, to ensure that counties and cities recognize their responsibilities in contributing to the attainment of the State housing goals, the California Government Code calls for local jurisdictions to plan for, and facilitate the construction of, their fair share of the region's projected housing needs, known as the RHNA.

3.10.2.2 Local

City of Oroville General Plan

The City's General Plan was updated in 2015 and serves as the overall guiding policy document for land use, development, and environmental quality in the City. The Housing Element of the General Plan was updated in 2014 and includes an analysis of the City's demographic and housing characteristics and trends; an evaluation of land, financial, and administrative resources available to address the City's housing goals; a review of potential constraints, both governmental and non-governmental, to meeting

Oroville's identified housing needs; and the Housing Action Plan for addressing the City's identified housing needs, including housing goals, policies and programs. It also contains measures necessary to mitigate and alleviate problems for all economic segments of the community. While many of these policies and actions require the City to take certain actions, they are not related to development of a particular project. Those policies that pertain to the Proposed Project are listed below.

Goal 1: Expand Housing Opportunities and Accessibility

Policy 1.3: Continue to facilitate the provision of housing for persons with disabilities and for persons with limited or restricted mobility to enhance accessibility and mobility.

Goal 3: Facilitate Development of New Housing to Meet the Needs of the Community.

Policy 3.2: Provide technical assistance to developers, nonprofit organizations, or other qualified private sector interests in seeking federal and state financing for affordable housing, including units affordable to extremely-low-income households and supportive housing for persons with developmental disabilities.

Goal 6: Encourage Residential Energy Conservation.

Policy 6.1: Encourage residential energy conservation through required compliance with current building codes and incentives for voluntary conservation efforts.

3.10.3 Environmental Impacts

3.10.3.1 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project may have a significant impact on the environment if it would:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

3.10.3.2 Project Impacts and Mitigation Measures

Impact POP-1	Project implementation could induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
Impact Determination	Less than Significant
Threshold	*Substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).*

Impact Discussion

The Project poses both direct and indirect potential to increase population within the City. As discussed previously, the 44.97-acre site would potentially result in the construction of 172 single-family homes. Based on the 2022 DOF average number of persons per household of 2.49 for the City of Oroville in 2022, the projected population increase from the Proposed Project would be approximately 428 residents. With the addition of 428 new residents, the Proposed Project could increase the population by 2.3 percent when compared to the 2022 estimated population for the City. The additional 172 residential units represent a 1.8 percent increase over the 2030 projected residential dwelling units of 9,685.

The Project Site's current General Plan land use designation and zoning district of ABP do not allow the construction of residential units, with the exception of a caretaker's home in the ABP zone. Additionally, the site is within the OMA B1 and B2 Compatibility Zones. For those areas of the Project within the B1 zone, the Project's proposed density of 3.74 dwelling units per acre is inconsistent with the B1 Compatibility Zone density (0.1 or more dwelling units per acre). Additionally, for those areas of the Project that are within the B2 zone, the project's proposed density of 4.15 dwelling units per acre is inconsistent with the B2 Compatibility Zone density (0.2 dwelling units per acre). Finally, the City's AIA-O zone only allows residential uses at one unit per 5 acres.

The Proposed Project is inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, while this population growth has not been considered in the City's General Plan, the estimated population from the Project represents only a 2.3 percent increase in the City's 2022 population and a 2.2 percent increase in housing units over the existing 2022 housing units in the city. Additionally, the 172 units represent a 1.8 percent increase over the projected 2030 number of housing units provided in the General Plan Draft EIR. The Oroville ALUCP does not provide population growth estimates; therefore the Proposed Project is not inconsistent with growth scenarios for this plan. Based on these factors, the Project would not result in a substantial unplanned growth. Therefore, the Proposed Project would have a less than significant impact in this area.

Mitigation Measures

No mitigation measures are required.

3.10.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. These General Plan projections are developed, in part, from the existing land use designations identified in the General Plan. As shown in Table 3-2, the anticipated growth in the City is expected to result in 9,685 new housing units, 7,026,000 sf of new industrial uses, and 12,168,000 sf of new commercial uses within the existing city limits by 2030 (City of Oroville 2015).

The BCAG is the official comprehensive planning agency for the Butte County region. BCAG produces long-term growth forecasts every 4 years for the region, which are used in preparation of BCAG's Metropolitan Transportation Plan (MTP), SCS, Air Quality Conformity Determination, and Regional Housing Needs Plan. The current growth projections cover the period from 2018 to 2040, and were prepared in 2019 for the 2020 MTP/SCS. The 2040 growth forecast indicates that the population in the BCAG region is expected to grow by approximately 38,000 people between 2018 and 2040, for a 2040 population of 265,964. The updated forecasts show the need to accommodate approximately 16,000 new housing units, an increase of 16 percent, and 9,280 new employees, an increase of 11 percent, between 2018 and 2040 (BCAG 2020).

3.10.4.1 Cumulative Impacts and Mitigation Measures

Impact LU-2-2	Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative significant environmental impact by inducing substantial unplanned population growth in an area.
Impact Determination	Less than Cumulatively Considerable
Threshold	*Result in cumulative impacts by inducing substantial unplanned population growth in an area.*

Impact Discussion

The Proposed Project is the only pending, proposed or foreseeable project which would result in development of an area at an increase of population over what has been planned for that area. The 44.87-acre Site is within the City of Oroville 2030 General Plan land use designation of Airport Business Park and is zoned ABP. With the exception of caretaker cottages, residential use is not an identified use allowed in Airport Business Park or ABP zoning district and as such, any increase in residential population to this area may be considered unplanned population growth. However, as stated above, the Project's increase in population represents only a 2.3 percent increase in the City's 2022 population and a 2.2 percent increase in housing units over the existing 2022 housing units in the city. Additionally, the 172 units represent a 1.8

percent increase over the projected 2030 number of housing units provided in the General Plan Draft EIR. Further, the Project's population represents only 0.16 percent of the BCAG 2040 population. None of this increase is considered substantial. Therefore, the Proposed Project would result in a less than cumulatively considerable impact in this issue area.

Cumulative Mitigation Measures

No mitigation required.

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3.11 Public Services

This section describes the environmental setting for public services, including the existing Project Site conditions and regulatory setting, impacts that would result from the Proposed Project, and the mitigation measures that would reduce identified significant impacts. The following section describes existing public services and evaluates the operation and capacity of these services with the development of the Proposed Project. Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of service are generally based on a service-to-population ratio, except for fire protection, which is usually based on response time.

The IS completed for the Proposed Project determined that there were less than significant impacts to four of the five public services listed in the Public Services impact areas. These public services include:

- police protection,
- schools,
- parks, and
- other public facilities.

Only fire protection was considered to be potentially impacted by the Project in the IS. As such, the above-listed public services will not be discussed further in this section.

3.11.1 Environmental Setting

3.11.1.1 Fire Services

The greater Oroville area receives fire protection and emergency services from two separate fire departments; the City of Oroville Fire Department (OFD) and CAL FIRE/Butte County Fire Department (BCFD). CAL FIRE/BCFD is the primary service provider for the unincorporated area surrounding the City. OFD is the primary service provider within the Oroville incorporated area including the Project Site (City of Oroville 2021). OFD operates out of Station 1 located at 2055 Lincoln Street, approximately 3 miles west of the Project site.

The OFD serves the approximate 12 square miles (7,680 acres) of the incorporated City of Oroville. Staffing for the OFD during Fiscal Year (FY) 2019-2020 consisted of 18 personnel, which included seven firefighters and six fire engineers. This number of personnel is slightly less than in previous years. As of FY20-21, the City budgeted for 21 OFD personnel in funded positions, including five fire engineers, four Staffing for Adequate Fire and Emergency Response (SAFER) fire fighters, three fire captains, and three fire lieutenants. Two OFD engines are staffed out of Station 1. OFD has five pieces of apparatus, shown in Table 3.11-1.

Table 3.11-1. Oroville Fire Department Apparatus	
Engine #	**Description**
1	2009 Smeal Type I firetruck
2	2009 Smeal Type I firetruck
5	2002 E-ONE Type I firetruck
10	2017 HME HXR Type III wildland firetruck
1	2001 American LaFrance 105-foot aerial ladder truck

Source: City of Oroville 2021

CAL FIRE/BCFD Station 63, located at 176 Nelson Avenue, currently serves emergency requests for the area north of the Feather River within the Thermalito area. This fire reporting district has historically had the third highest call responses for structure fires in the Oroville Planning area. The nearest staffed fire station, Station #63 at Nelson Avenue/County Center Drive, is located approximately 2.5 miles from the Project site (City of Oroville 2020).

The City and County maintain a mutual aid agreement in place, which would have both station crews respond to any emergency fire service call. Annexation of the property will change the primary fire respondent from Butte County to the City of Oroville. This change will not, however, have a significant effect or change the way fire protection services are delivered due to the existing cooperative agreement between City and County fire departments

Based on the General Plan, OFD is committed to meeting the needs of Oroville citizens by maintaining the service levels listed below. The times referenced are OFD's Standards of Cover Guidelines that were adopted by the City Council and placed into the Safety Element of the General Plan.

- Placing a first-due unit at a scene within 5 minutes of travel time for 90 percent of City's population.
- Locating and staffing department units so that an effective response of four units with, at minimum, eight personnel is available to all areas of the City within a maximum travel time of 10 minutes for 90 percent of all structure fires.

3.11.2 Regulatory Setting

3.11.2.1 Local

Oroville 2015 General Plan

The Public Facilities and Services Element addresses the changing public services and infrastructure needs in Oroville and presents information and policy guidance to ensure adequate provision and maintenance

of facilities and services in the City of Oroville. The Public Facilities and Services Element's goals and polices pertaining to the Project are as follows:

Goal PUB-2: Provide adequate fire protection and emergency response services.

Policies

P2.1 Maintain and enhance strategies to ensure adequate first response travel time of three to five minutes to incidents and travel time of ten minutes or less for additional resources within 90 percent of the call volume.

P2.3 Enforce all relevant fire codes and ordinances.

P2.4 Require all new development to use fire-safe building materials and early warning systems, and install sufficient water supply systems for fire suppression, consistent with State Building Code.

P2.6 Ensure that new development incorporates adequate emergency water flow, fire resistant design and materials, and evacuation routes; is accessible to emergency vehicles; and does not affect the ability of service providers to provide adequate emergency response.

P2.7 No new development or redevelopment will be occupied until the water flow capacity and pressure systems conform to current standards.

P2.11 Ensure that new development incorporates adequate emergency water flow.

3.11.3 Environmental Impacts

3.11.3.1 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, public services impacts are considered significant if implementation of the Proposed Project would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered 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 any of the public services:

    - Fire Protection

3.11.3.2 Methods of Analysis

Public service impacts related to Project construction and operational increases in population and land use intensity were evaluated based on information provided by the City fire department, planning department, General Plan and documentation of needed community service districts. This information addressed service capabilities, service ratios, response times, and performance objectives.

3.11.3.3 Project Impacts and Mitigation Measures

Impact PUB-1:	Project implementation could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered 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 fire, police, schools, and/or other public facilities.
Impact Determination:	Less than Significant with Mitigation
Threshold:	*Substantial adverse physical impacts associated with new or physically altered government facilities that are required as a result of Project implementation.*

Impact Discussion

3.11.3.4 Fire Protection

Development of the Project Site would result in a need for fire protection services to respond to any potential incidents that may occur at the site. The Project site is located in a somewhat sparsely developed part of the City, but it still receives fire service. However, according to the 2020 City of Oroville Municipal Services Review:

> "In evaluating the efficiency and effectiveness of present operations for future growth, the most pressing need is that of a second fire station at the Airport Business Park (also referred to as the west side safety facility), based on continued development throughout the City and within the SOI. This station will alleviate growing and unevenly distributed service demands and potential occupancy risk through an increased concentration of personnel in this area. In 2008, the City approved a number of small to moderately sized subdivisions and the Oro Bay Specific Plan, which will include up to 2,400 dwellings, just west of the airport. This westernmost portion of the City is outside the OFD five-minute response contour. Currently, the low call volume for this area does not affect the goal of responding to 90 percent of its calls within 5 minutes but as the population increases this will become an issue (City of Oroville 2021).

The Oroville City Council adopted *Fire Department Standards of Coverage Guidelines* in order to guide future growth as outlined in the City's General Plan. The goal statements include:

- Fire Department travel times should place a first-due unit at scene within five minutes travel time, for 90 percent of fire and medical incidents.

- Fire Department units shall be located and staffed such that an effective response force of four units with eight personnel minimum shall be available to all areas of the City within a maximum of ten minutes travel time, for 90 percent of all structure fires (City of Oroville 2015).

Additionally, Public Facilities and Services Element Policy P2.1 requires maintaining adequate first response travel time of 3 to 5 minutes to incidents and travel time of 10 minutes or less for additional resources within 90 percent of the call volume.

The Project is currently outside of a 5 minute response contour, and much of the west side of Oroville is not within the desired response time. The City of Oroville, formed two community facilities districts in September 2006: CFD No. 2006-1 Westside Public Safety Facilities; and CFD 2006-2 Public Safety Services. CFD 2006-1 was formed to provide a funding mechanism to mitigate the increased need for new public safety facilities, primarily a new fire station to be located in the vicinity of the OMA, which will include within it a small police substation. CFD 2006-2 was formed to fund ongoing fire, police, and code enforcement services that are needed as a result of additional development. To mitigate the impacts on fire and police services, all new development in the area that is essentially west of Highway 70 will be required to annex into both of these districts and will be subject to the collection of fees and revenues to fund additional public safety facilities and services. Therefore, upon implementation of Mitigation Measure PUB-1, the Project is not expected result in substantial adverse impacts associated with the provision of new or existing fire facilities; the need for new or physically altered fire facilities; or the ability to maintain acceptable service ratios or response times.

Mitigation Measures

The following mitigation measure shall apply to the Proposed Project.

PUB-1: **Annexation into CFD 2006-01 and CFD 2006-02.** Prior to recordation of the Final Map, the Project shall annex into both CFD 2006-01 and CFD 2006-02.

Timing/Implementation: *Prior to approval of Final Map*

Enforcement/Monitoring: *City of Oroville Planning Department*

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

3.11.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. These General Plan projections are developed, in part, from the existing land use designations identified in the General Plan. As shown in Table 3-2, the anticipated growth in the City is expected to result in 9,685 new housing units, 7,026,000 sf of new industrial uses, and 12,168,000 sf of new commercial uses within the existing City limits by 2030 (Oroville 2015).

3.11.4.1 Cumulative Impacts and Mitigation Measures

Impact PUB-2:	Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative significant environmental impact from the development of new or physically altered governmental facilities, need for new or physically altered governmental facilities?
Impact Determination:	Less than Cumulatively Considerable
Threshold:	*Result in cumulative impacts from the construction of new or physically altered governmental facilities, which could cause significant environmental impacts*

Impact Discussion

As stated previously, much of the west side of Oroville is not located within the desired fire response time. Additional, cumulative development in this area would result in the need for fire facilities. However, the City of Oroville anticipated this need resulting in the forming of CFDs 2006-1 and 2006-2. CFD 2006-1 was formed to provide a funding mechanism to mitigate the increased need for new public safety facilities, primarily a new fire station to be located in the vicinity of the OMA, which will include within it a small police substation. CFD 2006-2 was formed to fund ongoing fire, police, and code enforcement services needed as a result of additional development. To mitigate the cumulative impacts on fire and police services, all new development in the area that is essentially west of Highway 70 will be required to annex into both of these districts and will be subject to the collection of fees and revenues to fund additional public safety facilities and services. Within implementation of Mitigation Measure PUB-1, the Proposed Project would meet the City's goal for providing additional fire protection on the west side of Highway 70. Therefore, the Project would have a less than cumulatively considerable impact in this area.

Cumulative Mitigation Measures

No mitigation required.

3.12 Transportation

This section describes the environmental setting for transportation, including the existing site conditions and regulatory setting, impacts that would result from the Proposed Project, and, if significant impacts are identified, the mitigation measures that would reduce these impacts. KDA completed a TIS for the Feather Ranch Project in January 2023. This TIS is used extensively in this transportation section for analysis of the Proposed Project's potential transportation impacts. The TIS is included in Appendix 3.12.

The IS completed for the Proposed Project determined that there was a less than significant impact to one of the four subjects listed in the Transportation impact areas:

- Result in inadequate emergency access.

As such, this subject will not be discussed further in this section.

3.12.1 Environmental Setting

3.12.1.1 Existing Street and Highway System

Access to the Proposed Project will be provided by Feather Avenue and 20th Street. Feather Avenue terminates at the eastern boundary of the Project Site where it connects to 20th Street. Regional access is provided by SR 70 and SR 163 (Oro Dam Boulevard), which links the site with the other communities to the north and south of the City of Oroville.

The Project Site is located southwest of the intersection of 20th Street and Feather Avenue. Figure 3.12-1 shows the location of the Project Site relative to the adjacent roadway network and those intersections analyzed in the TIS. The roadway network is described below.

20th Street

20th Street is a two-lane north-south local roadway adjacent to the eastern boundary of the Project Site. The portion of 20th Street adjacent to the Project Site has a northern terminus approximately 350 feet north of Feather Avenue and does not intersect with Grand Avenue. This portion of 20th Street provides access to single-family residential development east of 20th Street. There is also a discontinuous portion of 20th Street north of the Project Site between Grand and Nelson avenues. 20th Street intersects with Oroville Dam Boulevard and extends south of Oroville Dam Boulevard as Larkin Road. Larkin Road extends to the south and southwest to the City of Live Oak. The *Oroville Sustainability Updates – Draft Supplemental EIR for the City of Oroville* (City of Oroville 2015a) 2035 roadway classification for Larkin Road is a two-lane minor arterial.

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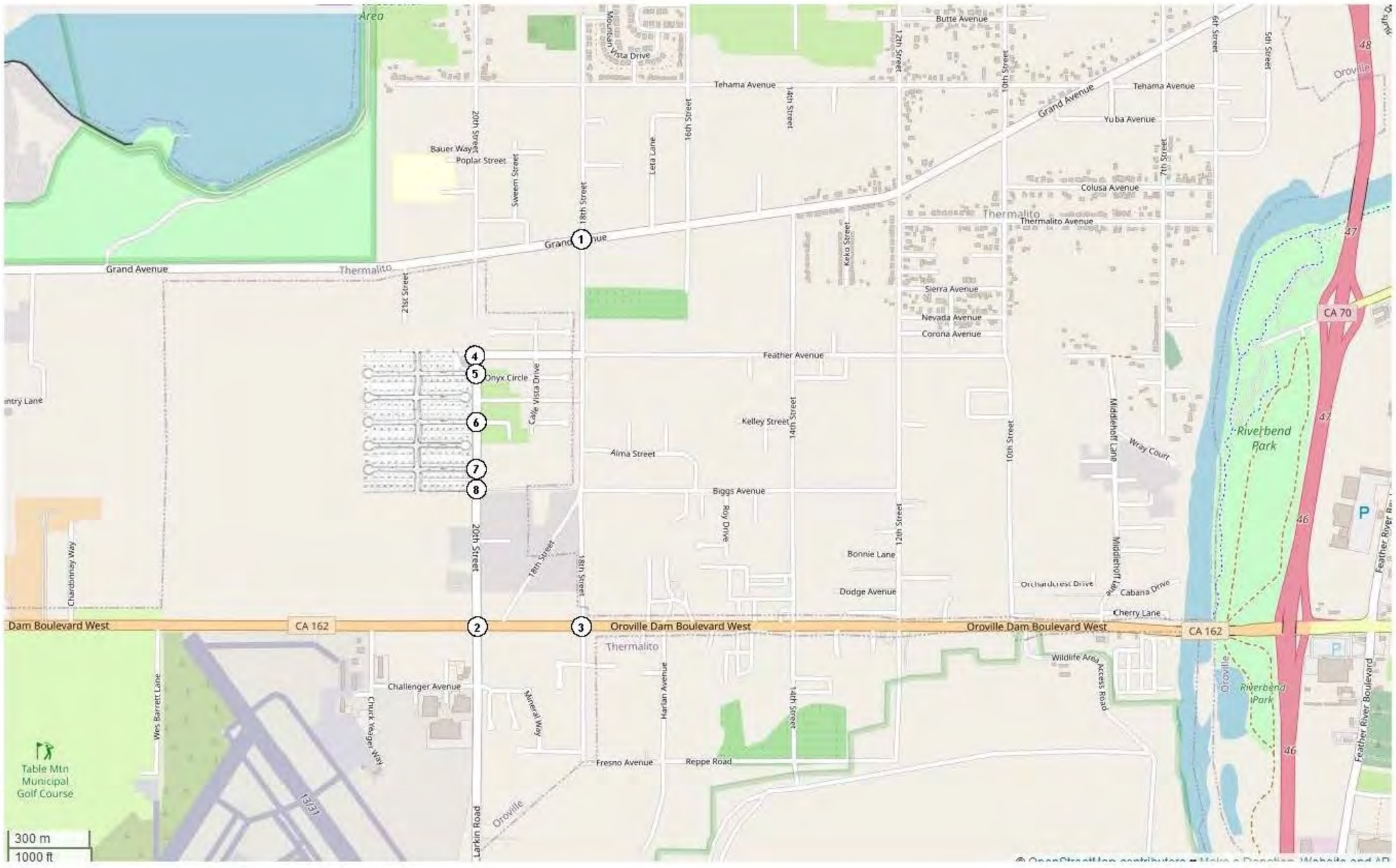

Source: KD Anderson and Associates, Inc.

Figure 3.12-1. Roadway Network and Intersections

2022-009/Feather Ranch Project

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Feather Avenue

Feather Avenue is a two-lane east-west local roadway. The western terminus of Feather Avenue is at 20th Street, at the northeastern corner of the Project Site. The eastern terminus of this portion of Feather Avenue is at 10th Street. There are also short discontinuous portions of Feather Avenue between 10th Street and the Feather River.

Onyx Circle (Avery Court) and Russell Proctor Way

Onyx Circle (Avery Court) and Russell Proctor Way are short two-lane east-west local roadways that provide direct access to single-family residential development east of 20th Street. The western terminus of both roadways is at 20th Street. The eastern terminus of Onyx Circle is approximately 1,000 feet east of 20th Street. Russell Proctor Way includes a right angle turn to the south, and has an eastern terminus approximately 400 feet east of 20th Street.

Oroville Dam Boulevard

Oroville Dam Boulevard is a two-lane east-west roadway approximately one third mile south of the Project site. It is designated SR 162 and has an interchange with SR 70 approximately 1.8 miles east of the Project Site. East of SR 70, the roadway generally has a northeast-southwest alignment and continues to Lake Oroville. SR 162 continues approximately 100 miles west of the Oroville area, intersects with SR 99, and has interchanges with Interstate 5 and U.S. Highway 101. The *Oroville Sustainability Updates – Draft Supplemental EIR for the City of Oroville* 2035 roadway classification for Oroville Dam Boulevard is a two-lane minor collector west of 20th Street and a two-lane major arterial east of east of 20th Street. There is a bicycle lane along the north side of Oroville Dam Boulevard from the Feather River to just west of 20th Street.

18th Street

18th Street is a two-lane local roadway with a generally north-south orientation approximately 0.25 mile east of the Project site. The southern terminus of 18th Street is at an intersection with Oroville Dam Boulevard. 18th Street has a northeast-southwest orientation immediately north of Oroville Dam Boulevard. There is also a discontinuous portion of 18th Street south of Oroville Dam Boulevard. 18th Street intersects with Grand Avenue, and the northern terminus of 18th Street is approximately 0.5 mile north of Grand Avenue.

The intersection of Oroville Dam Boulevard and 20th Street has exclusive left-turn lanes for both the eastbound-to-northbound and the westbound-to-southbound movements. The intersection of Oroville Dam Boulevard and 18th Street has an exclusive left-turn lane for the eastbound-to-northbound movement. There is a center-two-way left-turn lane along Oroville Dam Boulevard east of 18th Street. The intersection of Oroville Dam Boulevard and 18th Street is approximately 275 feet east of the intersection of Oroville Dam Boulevard and 20th Street (measured as centerline-to-centerline).

The limited distance between these two intersections constrains the lengths of both the westbound-to-southbound left-turn lane at the intersection of Oroville Dam Boulevard and 20th Street, and the eastbound-to-northbound left-turn lane at the intersection of Oroville Dam Boulevard and 18th Street.

3.12.1.2 Alternative Transportation Modes

Sidewalks

There are concrete and asphalt sidewalks at various locations along most City of Orland streets, but they become less prevalent in sparsely developed areas such as the Project Site. There are sidewalks on both sides of Feather Avenue and on the eastern side of 20th Street adjacent to the Project Site. There are no sidewalks on the site.

Bicycle Facilities

The City of Oroville Bicycle Transportation Plan was adopted by the City on August 3, 2010. This Plan identifies numerous existing and proposed bike trails and on-street lanes throughout the City. There are currently no bike lanes on the streets surrounding the site. However, 20th Street from Oro Dam Boulevard to Nelson Street is identified as a *second priority bikeway*. According to the Bicycle Transportation Plan, paths listed as first priority are considered necessary to facilitate bicycle transportation in the City limits. Second priority bikeways will be added to create connectivity in the regional area. All proposed bikeways are Class I or Class II, unless noted otherwise (City of Oroville 2010).

Public Transit

Public transportation in Oroville is provided through the area's public bus service, commercial bus services, shuttle service, taxi service and park-and-ride facilities. The BCAG operates the B-Line of the Butte Regional Transit system, which serves the residents of Oroville and provides intercity/regional and local fixed-route services. Oroville's B-Line service includes four local fixed transit routes within Oroville and three intercity/regional routes that provide commuter route service to Biggs, Chico, and Paradise. Greyhound provides commercial bus service; specifically, a limited service bus stop in Oroville at the ARCO gas station located at 410 Oroville Dam Boulevard with connections from Oroville to full-service stations located in the San Francisco Bay Area and the greater Sacramento area. Amtrak also provides commercial bus service. Amtrak offers daily bus service between Medford (Oregon), Redding, Sacramento and Stockton. Commercial shuttle service is provided by North Valley Shuttle with service to Sacramento International Airport. Taxi services are provided by Yellow Cab Company of Oroville and are available on demand or by reservation. Park-and-ride lots provide a place for commuters in single-occupant vehicles to transfer to public transit or carpools. Oroville has one park-and-ride facility, owned by Butte County, on Highway 70 at Grand Avenue (City of Oroville 2015a).

3.12.2 Study Area Intersections

The traffic-related effects of the Proposed Project were assessed for this TIS by analyzing traffic operations at intersections that would serve Project-related travel. The following study facilities were selected for analysis in consultation with City of Oroville staff. Figure 3.12-1 provides intersection locations. The numbers listed below correspond to the intersection numbers on this figure.

KDA analyzed 5he following six existing study intersections in the TIS:

1. Grand Avenue and 18th Street
2. Oroville Dam Boulevard and 20th Street/Larkin Road
3. Oroville Dam Boulevard and 18th Street
4. 20th Street and Feather Avenue
5. 20th Street and Onyx Circle/Street B
6. 20th Street and Russell Proctor Way/Street D

The following two intersections would only be present with construction of the Feather Ranch Project. As a result, these intersections were only analyzed under development conditions that included the Proposed Project:

7. 20th Street and Street F
8. 20th Street and Biggs Avenue

3.12.3 Existing Intersection Traffic Volumes And Levels Of Service

The following is a description of existing traffic operating conditions at the study intersections.

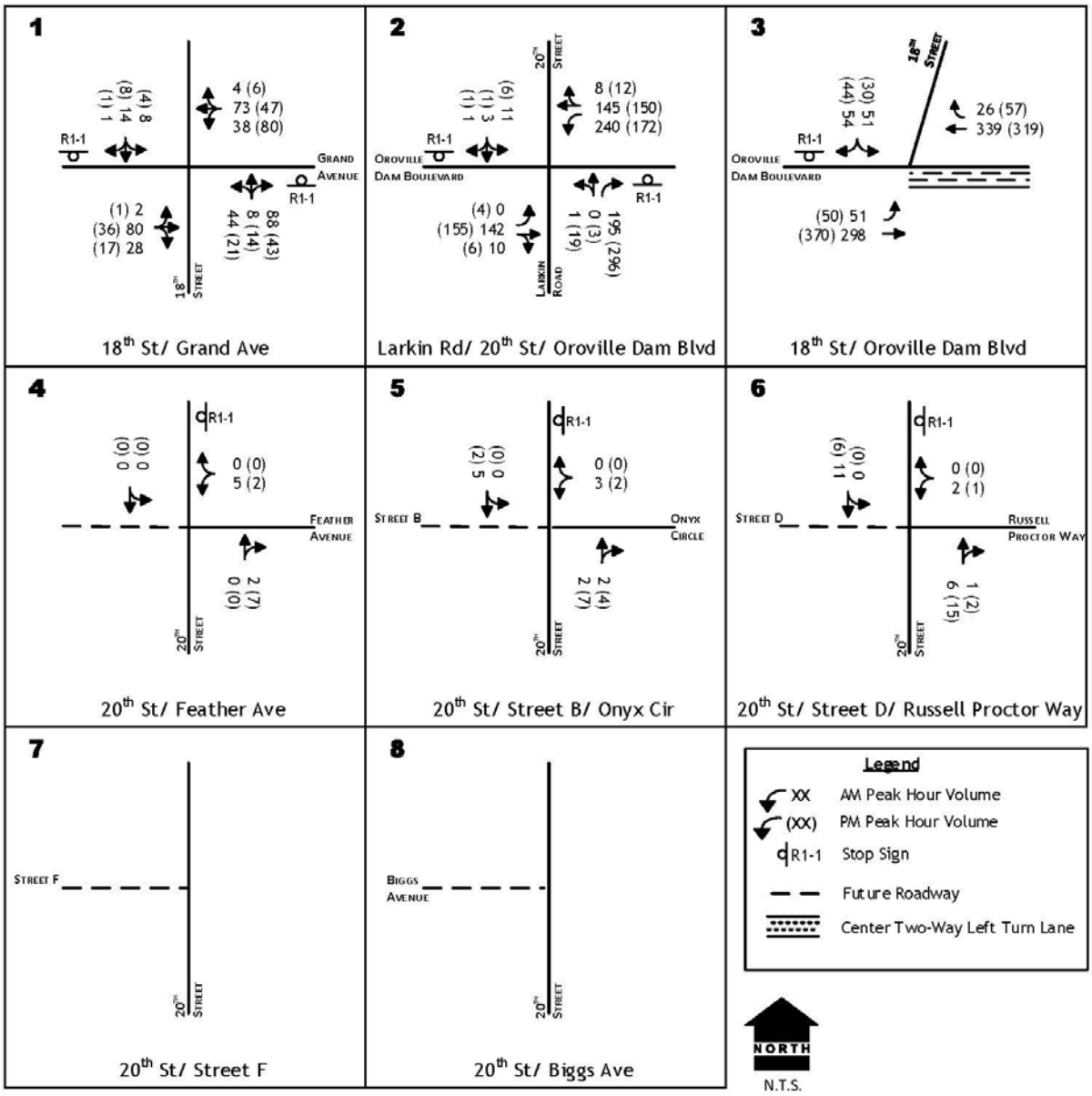
3.12.3.1 Traffic Volumes

Intersection turning movement count data at the study intersections were collected for this TIS on Tuesday March 1, 2022. Traffic count data collected for this TIS are presented in the technical appendix of the TIS. The peak period intersection turning movement count data were collected between 7:00 a.m. and 9:00 a.m. and from 4:00 p.m. to 6:00 p.m.. Volumes during the highest 1-hour periods were used for this TIS. Figure 3.12-2 presents the existing lane configurations and existing a.m. peak hour and p.m. peak hour traffic volumes at the existing study intersections.

3.12.3.2 Intersection Levels of Service

Table 3.12-1 presents existing a.m. peak hour and p.m. peak hour Level of Service (LOS) at the six existing study intersections. The worksheets presenting the calculation of LOS are included in the technical appendix of the TIS.

All six existing study intersections operate at acceptable LOS D or better during both the a.m. and the p.m. peak hours. No improvements are needed at these intersections to achieve acceptable LOS.



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EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-2. Existing Traffic Volumes and Land Configurations

Table 3.12-1. Level of Service – Existing Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1. Grand Ave & 18th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	5.3	A	5.6
EB Left-Turn			A	7.4	A	7.3
WB Left-Turn			A	7.5	A	7.5
NB Approach			B	10.7	B	10.3
SB Approach			B	11.6	B	11.3
2. Oroville Dam Blvd & 20th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	5.9	A	6.7
EB Left-Turn			A	0.0	A	7.6
WB Left-Turn			A	8.2	A	8.0
NB Approach			B	10.6	B	12.3
SB Approach			D	29.6	D	28.5
3. Oroville Dam Blvd & 18th St	Unsignalized SB Stop Sign	No				
Overall Intersection			A	2.3	A	1.6
EB Left-Turn			A	8.3	A	8.3
SB Approach			B	13.6	B	12.7
4. 20th St &Feather Ave	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	5.3	A	1.7
WB Approach			A	8.5	A	8.5
SB Approach			A	0.0	A	0.0
5. 20th St & Onyx Cr/St B	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	2.2	A	1.1
WB Approach			A	8.6	A	8.6
SB Approach			A	0.0	A	0.0
6. 20th St & Russell Proctor Way/St D	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	0.9	A	0.4
WB Approach			A	8.6	A	8.6
SB Approach			A	0.0	A	0.0

Source: KDA 2023
Notes: LOS = Level of Service. Delay is measured in seconds per vehicle
NB = northbound, WB = westbound, SB = southbound, EB = eastbound
St = Street, Blvd = Boulevard

3.12.4 Regulatory Setting

3.12.4.1 State

Department of Transportation

Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within the state's boundaries. Alone and in partnership with Amtrak, Caltrans is also involved in the support of intercity passenger rail service in California and is a leader in promoting the use of alternative modes of transportation.

Transportation facilities under the jurisdiction of Caltrans within the vicinity of the Project Site include Interstate 5 (I-5) (including on- and off-ramps) and Montague Road (SR-3).

Caltrans' Guide for the Preparation of Traffic Impact Studies contains the following policy pertaining to the LOS standards within Caltrans jurisdiction:

> Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.

Consistent with Caltrans practice, the TIS considered LOS "D" as the standard threshold acceptable operations for any intersection under Caltrans jurisdiction

3.12.4.2 Local

Oroville 2030 General Plan

The Circulation and Transportation Element of the Oroville General Plan (2015b) is concerned with the safe and efficient movement of people and goods in and around the City of Oroville by means of a wide range of transportation modes. The Element accounts for the critical link between land use patterns and transportation. This Element provides a number of goals and policies related to transportation within the Circulation and Transportation Element. The General Plan goals and polices pertaining to transportation and the Project are as follows:

Goal CIR-2: Create and maintain a roadway network that provides for the safe and efficient movement of people and goods throughout the City while maintaining the quality of life for residents.

Policies

P2.1: Maintain a Level of Service (LOS) D or better as defined in the most current edition of the Highway Capacity Manual or subsequent revisions for roadways and intersections, except as specified below:

City/County Roadways:

- *Lincoln Boulevard – Baggett Marysville Road to Ophir Road (LOS E)*

- *Ophir Road – Highway 70 to Lincoln Boulevard (LOS E)*
- *Ophir Road – Lincoln Boulevard to Lower Wyandotte Road (LOS F)*
- *Table Mountain Boulevard – Cottonwood Road to Garden Drive (LOS E)*

State Facilities:

- *Olive Highway – Oroville Dam Boulevard to Lower Wyandotte Road (LOS F)*
- *Olive Highway – Lower Wyandotte Road to Foothill Boulevard (LOS F)*
- *Olive Highway – Foothill Boulevard to Oakvale Avenue (LOS F)*
- *Olive Highway – Oakvale Avenue to Kelley Ridge Road (LOS E)*
- *Oroville Dam Boulevard – Feather River Boulevard to Olive Highway (LOS F)*

Additional exceptions to this policy may be allowed by the City Council on a case-by-case basis, where reducing the level of service would result in a clear public benefit. Such circumstances may include, but are not limited to, the following:

- *Preserving open space land*
- *Preserving scenic roadways/highways*
- *Avoiding adverse impacts to alternative transportation modes*
- *Right-of-way constraints would make improvements infeasible*

P2.5: Reduce the total vehicle miles traveled through designation of land uses that support multi-modal travel and provision of more direct routes to high activity locations.

Goal CIR-3: Promote the strategic development of new roadways that benefit and enhance the existing roadway network and improve access and mobility for all modes.

Policies

P3.1: Widths for new streets shall be limited to the minimum width necessary to adequately carry the volume of anticipated traffic and meet the City's LOS Policy of D, while allowing for adequate bicycle and pedestrian facilities, emergency access, and large vehicle access.

P3.2: Prohibit development of private streets in new residential projects, unless emergency access standards, maintenance agreements, and design standards are met to the satisfaction of the City Engineer and there are compelling circumstances that prohibit the streets from being designed to meet public standards.

P3.3: New development shall ensure that safe and efficient emergency vehicle access is provided.

P3.4: Ensure, through a combination of traffic impact fees and other funding mechanisms, that new development pays its fair share of the costs of circulation improvements.

P3.5: Provide transportation facilities based on a "Complete Streets" set of criteria that facilitates the balanced use of all travel modes (pedestrians, bicyclists, motorists, and transit users) meeting the transportation needs of all ages and abilities and providing mobility for a variety of trip purposes.

Goal CIR-6: Provide a bicycle network to encourage bicycling for both transportation and recreation.

Policies

P6.9: Coordinate the construction and improvement of the bicycle system with development projects adjacent to bikeways, and with park and recreational facilities, schools and residential subdivisions.

P6.10: Ensure that developments located along existing and future bikeways provide for bicycle use within and adjacent to project boundaries.

Goal CIR-7: Provide a pedestrian network that encourages walking for transportation and recreation.

Policies

P7.5: Require installation of sidewalks and/or walking paths along all city streets in newly developing areas.

P7.7: New development in Oroville will encourage pedestrian accessibility and facilitate the use of non-automobile forms of transportation.

Goal CIR-8: Facilitate the mobility of persons with accessibility needs.

Policies

P8.1: New development shall meet the requirements of the Americans with Disabilities Act (ADA).

3.12.5 Environmental Impacts

3.12.5.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. Transportation impacts are considered significant when the project would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.
- Conflict or be inconsistent with CEQA Guidelines Section 1564.3, subdivision (b).

- Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

3.12.5.2 Methods of Analysis

The following section outlines the analysis parameters and methodologies that were used in the TIS to quantify potential project impacts for the analysis scenarios.

Level of Service Analysis Procedures

The LOS analysis provides a basis for describing existing traffic conditions and for evaluating Project-related traffic effects. 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 characteristics associated with the various LOS for intersections are presented in Table 1 of the TIS.

The LOS was analyzed using methods presented in the *Highway Capacity Manual 6th Edition* (Transportation Research Board 2016). Methods described in the *Highway Capacity Manual 6th Edition* were used to provide a basis for describing traffic conditions and for evaluating project traffic effects. The Highway Capacity Manual 6th Edition methods, as implemented in the Synchro software package (Trafficware 2022), was used to analyze the study network (KDA 2023).

For two-way stop sign-controlled unsignalized intersections (or one-way stop-sign controlled "T" intersections), the *Highway Capacity Manual 6th Edition* method considers gap acceptance and average delay of motorists on minor streets and in turn lanes to establish LOS, which is based on the length of the delay experienced by motorists on the worst single approach, rather than the intersection as a whole. It should be noted that overall intersection average LOS at unsignalized intersections is better, often much better, than LOS on the worst single approach.

Worksheets and output reports for the calculation of LOS and vehicle queues for all scenarios analyzed for the TIS are presented in the technical appendix of the TIS (included as Appendix 3.12 of this Draft EIR).

Signal Warrants Procedures

Traffic signal warrants are a series of standards that provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should not be installed if none of the warrants are met, because installation of signals would increase delays on the previously uncontrolled major street, resulting in an undesirable increase in overall vehicle delay at the intersection. Signalization may also increase the occurrence of certain types of accidents. Therefore, the detriment of increased accidents and overall delay may be greater than the benefit in traffic operating conditions on the single worst movement at the intersection if signals are installed where signal warrants are not met. Signal warrants, then, provide an industry-standard basis for identifying when the adverse effect on the worst movement is substantial enough to warrant signalization.

For the analysis conducted for this TIS, available data at unsignalized intersections are limited to a.m. and p.m. peak hour volumes. Thus, unsignalized intersections were evaluated using the Peak Hour Warrant (Warrant Number 3) from the Caltrans document *California Manual on Uniform Traffic Control Devices* (Caltrans 2021). This warrant was applied where the minor street experiences long delays in entering or crossing the major street for at least one hour of the day. The Peak Hour Warrant itself includes several components. Some of the components involve comparison of traffic volumes and vehicle delay to a series of standards. Another component involves comparison of traffic volumes to a nomograph.

Even if the peak hour warrant is met, a more detailed signal warrant study is recommended before a signal is installed. The more detailed study should consider volumes during the eight highest hours of the day, volumes during the four highest hours of the day, pedestrian traffic, and accident histories.

Signal warrant analysis worksheets for all stop sign-controlled intersections for all development conditions are presented in the technical appendix of the TIS.

Travel Forecasting

As noted earlier in the *Overall Analysis Approach* section of this TIS, future year cumulative conditions were analyzed for this study. Future year traffic volumes used in the analysis of cumulative conditions are based on the BCAG Regional Travel Demand Model (KDA 2023).

The BCAG Regional Travel Demand Model estimates both base year traffic volumes and forecasts of future year traffic volumes. Traffic volumes from the travel model were used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection *balance*. To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The *balancing* of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board 1982). The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

Vehicle Miles Traveled Significance Threshold

The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* provides recommended thresholds for determining the significance of VMT impacts associated with land use development projects. Specific thresholds are provided for residential, office, and retail commercial types of development. The technical advisory generally recommends establishing a 15 percent reduction in VMT as a significance threshold, compared to a baseline. That is, if a project would result in a reduction of at least 15 percent in VMT, compared to a baseline, the project can be considered to have a less than significant impact. The significance threshold may be thought of as 85 percent of baseline conditions (100 percent less 15 percent equals 85 percent). A project that would not result in a reduction of at least 15 percent is considered to have a significant impact. The technical advisory notes,

> "In summary, achieving 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State's emissions goals."

The 2030 General Plan supports the reduction of VMT. Policy P2.5 of the General Plan Circulation Element states:

> "Reduce the total vehicle miles traveled through designation of land uses that support multi-modal travel and provision of more direct routes to high activity locations."

The General Plan does not currently present quantitative significance thresholds or methods for assessing VMT.

The BCAG has prepared a series of documents to assist local member jurisdictions in the implementation of SB 743. One of the documents, *BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices* (KDA 2023), provides a method for conducting qualitative screening-level assessments of project-related VMT. The document and method include maps showing whether VMT generated by land use development in geographic areas would be above or below 85 percent of baseline conditions. The maps show data for both residential land use development and employment-generating land use development. For residential land use development, the maps show home-based VMT per resident compared to regional average VMT.

BCAG prepared an update to the Regional Travel Demand Model for the purpose of developing Traffic Analysis Zone (TAZ) level VMT estimates appropriate for SB 743 analysis (KDA 2023). Data from the Regional Travel Demand Model updated for VMT estimates were used to:

- estimate average baseline VMT generated by land use development in each city in Butte County and by development in the unincorporated Butte County area, and
- quantitatively assess VMT generated by land use development in each TAZ.

The Regional Travel Demand Model updated for VMT estimates was used to generate both jurisdiction average baseline VMT data, and for the TAZ-level VMT data for both residential land use development and employment-generating land use development. For residential land use development, the model was used to calculate:

- home-based production VMT per resident, and
- home-based production VMT per household.

For the TIS, guidance from the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* was used as the significance threshold for project-related impacts on VMT. If a project would generate VMT at a level equal to or lower than 15 percent below baseline conditions (i.e., equal to or less than 85 percent of baseline conditions), the project will be considered to have a less-than-significant impact on VMT. If a project would generate VMT at a level above 15 percent below baseline conditions (i.e., greater than 85 percent of baseline conditions), the project will be considered to have a significant impact on VMT. KDA used the BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency

Choices and the data from the Regional Travel Demand Model updated for VMT estimates to determine whether VMT generated by the Feather Ranch Project would exceed a level 15 percent below baseline conditions.

3.12.5.3 Project Impacts and Mitigation Measures

Impact TR-1	Project implementation could conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.
Impact Determination	Less than Significant
Threshold	*Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.*

Impact Discussion

Trip Generation

Development of the Feather Ranch Project would generate new vehicle trips and potentially affect traffic operations on study facilities. The number of vehicle trips expected to be generated by the Proposed Project has been estimated using typical trip generation rates that have been developed based on the nature and size of Project land uses. Data compiled by the Institute of Transportation Engineers (ITE) and presented in the publication *Trip Generation Manual, 11th Edition* (ITE 2021) is the source of trip generation rates.

The trip generation rates used in this TIS are presented in Table 3.12-2. The trip generation rates are applied to the amount of Project-related land uses. The resulting trip generation estimates are presented in Table 3.12-3.

As shown in Table 3.12-3, the Proposed Project would generate 120 trips during the a.m. peak hour and 162 trips during the p.m. peak hour.

Table 3.12-2. Trips Per Unit							
Land Use and ITE Land Use Code	Units	Trips Per Unit					
		AM Peak Hour			PM Peak Hour		
Single Family Detached Housing (ITE Code 210)	Dwelling Units	0.18	0.52	0.70	0.59	0.35	0.94

Note: Trip generation rates are based on average rates.
Source: KDA 2023

Table 3.12-3. Project Trip Generation Estimates							
Land Use and ITE Land Use Code	Quantity	Trips Generated					
		AM Peak Hour			PM Peak Hour		
Single Family Detached Housing (ITE Code 210)	172 Dwelling Units	31	89	120	101	60	162

Note: Total may not equal the sum of components due to rounding.
Source: KDA 2023

Trip Distribution

Project-related trips were geographically distributed over the study area roadway network. The geographical distribution of trips is based on the relative attractiveness or utility of possible destinations. Trip distribution percentages applied in this TIS are presented in Table 3.12-4.

Table 3.12-4. Proposed Project Trip Distribution Percentages		
Direction of Travel	Near-Term Background	Long-Term Cumulative Background
West on Grand Avenue	0.2	1.0
East on Grand Avenue	39.9	34.5
East on Feather Avenue	0.1	0.3
West on Oroville Dam Boulevard	9.1	7.8
South on Larkin Road	16.2	19.7
East on Oroville Dam Boulevard	34.5	36.7
Total:	**100.0**	**100.0**

Source: KDA 2023

The BCAG Regional Travel Demand Model was used to estimate trip distribution percentages. The travel demand model is considered to be a valid source for the trip distribution percentages because it directly addresses:

- the location of destinations of project-related trips,
- the magnitude of land uses that would attract project-related trips, and
- the quality of access to the destinations via the roadway network.

The TIS included an analysis of scenarios based on existing and cumulative background development conditions.

The travel demand model was used to estimate trip distribution percentages for each of these two background conditions. Background (non-Project) land uses are different in each of the two background conditions. The different land uses result in different geographic distributions of travel. As a result, the trip distribution percentages differ for each of the two background development conditions. Table 3.12-4 presents the trip distribution percentages for each of the two background development scenarios.

A *select link* analysis was conducted using the travel demand model to determine the geographic distribution of Project-related travel. The select link analysis identifies vehicle trips associated with the proposed Project Site, and identifies the direction of travel to and from the Project Site. Raw, pre-adjustment, traffic model results used in the development of trip distribution percentages are presented in the technical appendix of the TIS.

Trip Assignment

Traffic that would be generated by the Proposed Project was added to existing volumes. Figure 3.12-3 displays the Project-related-only traffic volumes for each study intersection in the a.m. and p.m. peak hours. Figure 3.12-4 displays the resulting Existing Plus Project traffic volumes anticipated for each study intersection in the peak hours.

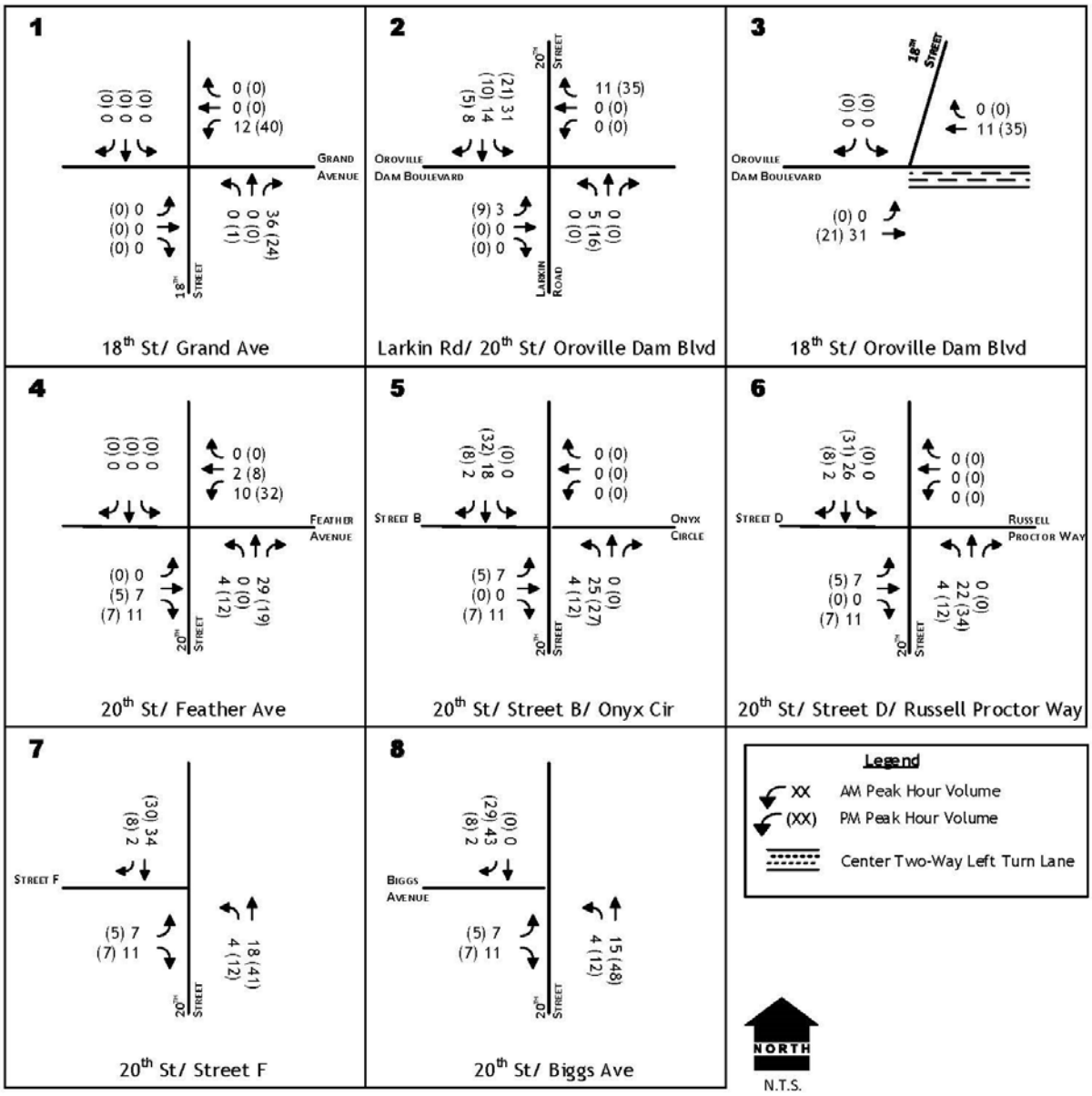
Intersection Levels Of Service

Table 3.12-5 presents the a.m. and p.m. peak hour LOS at each study intersection under Existing Plus Project conditions. The worksheets presenting the calculation of LOS are included in the technical appendix of the TIS.

Traffic volumes under Existing Plus Project conditions would be generally higher than under Existing conditions and, as a result, vehicle delay at study intersections under Existing Plus Project conditions would be higher than under Existing conditions.

Under Existing Plus Project conditions, LOS at seven of the eight study intersections would be at acceptable LOS B or better during both the a.m. and the p.m. peak hours. With the Feather Ranch Project, traffic operations at these intersections would be consistent with General Plan policies on LOS and no improvements are required.

Under Existing Plus Project conditions, the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road would operate at unacceptable LOS E, which is considered to be inconsistent with the General Plan policy on LOS. Oroville Dam Boulevard is a Caltrans state highway (SR 162) at this location. Any improvements to this intersection would require approval by the City of Oroville and Caltrans. The southbound approach to this intersection would operate at LOS E with 42.0 seconds of delay during the a.m. peak hour, and LOS E with 38.0 seconds of delay during the p.m. peak hour.



PROJECT ONLY TRAFFIC VOLUMES
EXISTING BACKGROUND CONDITIONS

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Transportation Engineers
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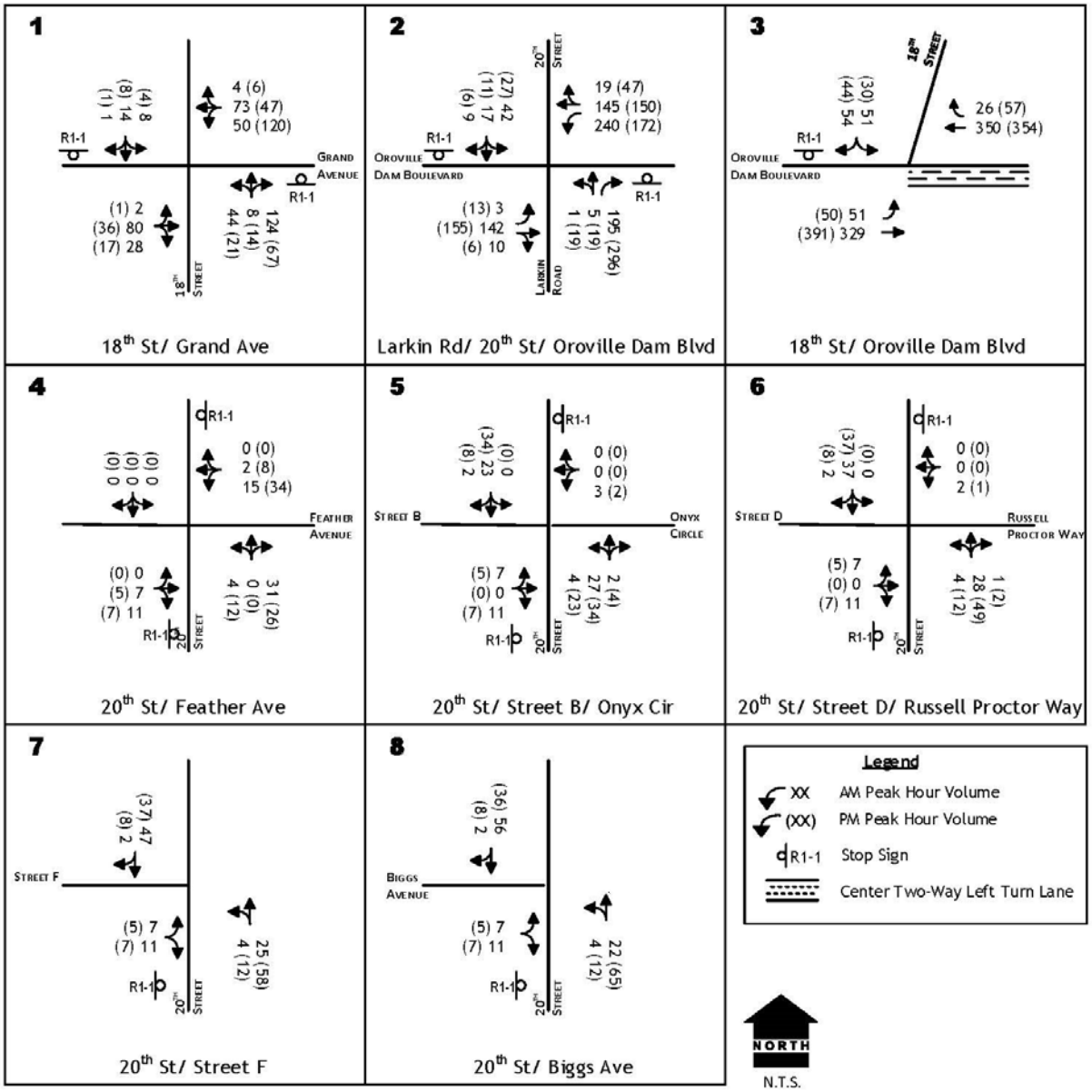
Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-3. Project Only Traffic Volumes Existing Background Conditions



EXISTING PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers
2610-28 RA 1/2/2023

Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-4. Existing Plus Project Traffic Volumes and Lane Configurations

Table 3.12-5. Level of Service – Existing Plus Project Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1. Grand Ave & 18th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	6.0	A	6.3
EB Left-Turn			A	7.4	A	7.3
WB Left-Turn			A	7.6	A	7.6
NB Approach			B	11.0	B	10.6
SB Approach			B	12.1	B	12.5
2. Oroville Dam Blvd & 20th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	8.5	A	8.1
EB Left-Turn			A	7.6	A	7.7
WB Left-Turn			A	8.2	A	8.0
NB Approach			B	10.8	B	12.9
SB Approach			E	42.0	E	38.0
3. Oroville Dam Blvd & 18th Street	Unsignalized SB Stop Sign	No				
Overall Intersection			A	2.2	A	1.5
EB Left-Turn			A	8.3	A	8.5
SB Approach			B	13.9	B	13.2
4. 20th St & Feather Avenue	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	4.8	A	6.2
EB Approach			A	8.8	A	8.8
WB Approach			A	8.9	A	9.1
NB Approach			A	7.2	A	7.2
SB Approach			A	0.0	A	0.0
5. 20th St & Onyx Cr/St B	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	2.7	A	2.0
EB Approach			A	8.7	A	8.8
WB Approach			A	9.0	A	9.2
NB Approach			A	7.3	A	7.3
SB Approach			A	0.0	A	0.0
6. 20th St & Russell Proctor Way/St D	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	2.2	A	1.7
EB Approach			A	8.8	A	8.9
WB Approach			A	9.1	A	9.3
NB Approach			A	7.3	A	7.3
SB Approach			A	0.0	A	0.0

Table 3.12-5. Level of Service – Existing Plus Project Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
7. 20th St & St F						
Overall Intersection	Unsignalized EB Stop Sign	No	A	2.0	A	1.6
EB Approach			A	8.8	A	8.9
NB Approach			A	7.3	A	7.3
8. 20th St & Biggs Ave						
Overall Intersection	Unsignalized EB Stop Sign	No	A	1.8	A	1.4
EB Approach			A	8.8	A	8.9
NB Approach			A	7.3	A	7.3

Source: KDA 2023
Notes: LOS = Level of Service. Delay is measured in seconds per vehicle.
NB = northbound, WB = westbound, SB = southbound, EB = eastbound
Ave = Avenue, St = Street, Blvd = Boulevard

While LOS E is inconsistent with General Plan Policy P2.1 and would conflict with a program, plan, ordinance or policy addressing the circulation system, as of July 1, 2020, LOS is no longer to be considered a significant impact under CEQA. Pursuant to CEQA Guidelines, Section 15064.3, VMT is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision 15064.3(b)(2) of the CEQA Guidelines, regarding roadway capacity, a project's effect on automobile delay cannot constitute a significant environmental impact. As such, mitigation for the improvement of LOS is not required. However, the TIS does provide recommendations for improving the LOS at the Oroville Dam Boulevard & 20th Street/Larkin Road intersection as follows:

Recommended Improvement TRAF-1 – Widen the Southbound Approach at the Intersection of Oroville Dam Boulevard and 20th Street/Larkin Road, widening the southbound approach at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road would improve LOS to an acceptable level under Existing Plus Project conditions. The existing single-lane southbound approach should be replaced with an exclusive southbound-to- eastbound left-turn and a southbound combined through/right-turn lane.

Table 3.12-6 shows this intersection would operate at acceptable LOS D under Existing Plus Project conditions with implementation of this recommended improvement. The southbound approach to this intersection would operate at LOS D with 34.9 seconds of delay during the a.m. peak hour, and LOS D with 34.5 seconds of delay during the p.m. peak hour. LOS D is considered consistent with the General Plan policy on LOS. Impacts would be less than significant after mitigation.

Table 3.12-6. Level of Service – Existing Plus Project Conditions With Mitigation						
Study Intersections and Approaches	**Intersection Control**	**Signal Warrant Met?**	**AM Peak Hour**		**PM Peak Hour**	
			LOS	**Delay**	**LOS**	**Delay**
2. Oroville Dam Blvd & 20th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	7.9	A	7.9
EB Left-Turn			A	7.6	A	7.7
WB Left-Turn			A	8.2	A	8.0
NB Approach			B	10.8	B	12.9
SB Approach			D	34.9	D	34.5

Impact on Public Transit Service

As noted earlier under Public Transportation, the public transit stop closest to the Project Site is approximately 1 mile away. Because of the distance, implementation of the Feather Ranch Project is not expected to adversely affect existing public transit service. As a result, the Project would have a less than significant impact on public transit service. No mitigation measures would be required.

Land use development in the immediate vicinity of the Project Site is currently sparse. As a result, it is considered unlikely fixed route public transit service would be extended to the area in the near-term. Possible extension of public transit service to the area could be considered if future land use projects in the vicinity of the Project Site result in greater development density.

Impact on Bicycle and Pedestrian Facilities

Implementation of the Proposed Project would result in an increase in demand for bicycle and pedestrian facilities. Currently, there are sidewalks on both sides of Feather Avenue and on the eastern side of 20th Street adjacent to the Project Site. Project-related improvements to 20th Street and abutting Project vicinity roadways include curbs, gutters and sidewalks adjacent to the Project Site. Sidewalks would front 20th Street, Biggs Avenue, and Feather Avenue as well as along all internal proposed roadways.

Greenway space would be provided along internal sidewalks, around the proposed storm drainage retention basin at the northeastern corner of the Project site, and fronting 20th Street and Biggs Avenue. These facilities would provide bicycles and pedestrians with an option to avoid traveling adjacent to vehicle traffic. Because of these project-related improvements that would facilitate bicycle and pedestrian travel, the Feather Ranch Project is considered to have a less than significant impact on bicycle and pedestrian facilities. No mitigation measures are required. Mitigation measures to reduce the impact of the Feather Ranch Project on VMT would also encourage bicycle and pedestrian travel. While not required to reduce the impact of the Project on bicycle and pedestrian facilities, implementation of Mitigation Measures TR-1, TR-2 and TR-3 under Impact TR-2 would result in improvements to bicycle and pedestrian facilities.

Mitigation Measures

No mitigation measures are required.

Impact TR-2:	Project implementation could conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).
Impact Determination:	Significant and Unavoidable
Threshold:	*Conflict or inconsistency with CEQA Guidelines Section 15064.3, subdivision (b).*

Impact Discussion

CEQA Guidelines Section 15064.3, subdivision (b) provides criteria for analyzing transportation impacts based on a VMT methodology instead of the now superseded (as of January 1, 2019) LOS methodology. Pertinent to the Proposed Project are those criteria identified in Section 15064.3(b)(1) Land Use Projects. According to this section:

> "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor[1] should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."

The impacts of the Proposed Project on VMT were evaluated in the TIS. As described earlier under the VMT Significance Threshold, the evaluation of the impacts of the Feather Ranch Project on VMT was conducted using:

- the BCAG document BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices (BCAG 2021a), and
- an update of the Regional Travel Demand Model prepared by BCAG for the purpose of developing TAZ-level VMT estimates appropriate for SB 743 analysis.

Figure 4-A of the *BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices* document shows the Project Site is located in an area where home-based VMT per

[1] *High-quality transit corridor* means an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. For the purposes of this Appendix, an "existing stop along a high-quality transit corridor" may include a planned and funded stop that is included in an adopted regional transportation improvement program.

resident would be greater than a level 15 below the baseline condition. That is, the method presented in this document indicates residential development in the Project site would result in the generation of VMT that is not below 85 percent of baseline conditions. The assessment presented in the BCAG SB 743 Implementation document is quantified in greater detail in data from the updated Regional Travel Demand Model. The Project Site is located in TAZ 911 of the travel demand model. This TAZ is bounded by Grand Avenue on the north, 20th Street on the east, Oroville Dam Boulevard on the south, and the northerly extension of Wes Barrett Lane on the west.

On a per-resident level, data from the travel demand model shows residential land use development in TAZ 911 would generate 26.7 home-base VMT per resident, while the average for the City of Oroville would be 19.1 home-based VMT per resident. Therefore, the Project Site would be expected to generate VMT at 140 percent of the baseline City of Oroville average (26.7÷19.1=1.40).

On a per-household level, data from the travel demand model shows residential land use development in TAZ 911 would generate 63.3 home-based VMT per household, while the average for the City of Oroville would be 43.6 home-based VMT per household. Therefore, the Project site would be expected to generate VMT at 145 percent of the baseline City of Oroville average (63.3÷43.6=1.45).

As shown in the *BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices* and in the updated travel demand model data, development of the Feather Ranch Project would generate VMT greater than 85 percent of baseline conditions. As a result, the impact of the Feather Ranch Project on VMT is considered significant and mitigation is required.

The *BCAG SB 743 Implementation – Mitigation Strategies* document (BCAG 2021b) is one of the documents in a series BCAG has prepared to assist local member jurisdictions in the implementation of SB 743. The document presents potential mitigation measures which reduce the impact of projects on VMT. The document presents a wide range of measures for:

- different types of land uses (e.g., residential versus employment-generating);
- different sizes of project; and
- different settings (e.g., urban core versus suburban).

A substantial portion of the measures presented in *BCAG SB 743 Implementation – Mitigation Strategies* apply only to employment-generating land use development projects and are, therefore, not applicable to the Proposed Project.

BCAG SB 743 Implementation – Mitigation Strategies also provides information on the feasibility of measures and whether sufficient evidence is available for use of the measure as a mitigation measure in CEQA documents. KDA reviewed the applicability, feasibility, and sufficiency of evidence for measures listed in *BCAG SB 743 Implementation – Mitigation Strategies* in the TIS to identify potential mitigation measures for the Project.

The VMT reducing descriptions provided in Mitigation Measures TR-2 and TR-3 include estimated ranges of effectiveness for each measure published *in BCAG SB 743 Implementation – Mitigation Strategies*. It should be noted the ranges of estimated effectiveness are not project-specific and would require

additional analysis and interpretation to be applied to specific projects, including the Proposed Project. In some cases, the high end of the ranges of effectiveness applies to large projects, projects in highly urban settings, and projects with substantial alternative transportation infrastructure, for example commuter rail facilities.

Mitigation Measures

TR-1: **Provide Pedestrian Network Improvements.** Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT.

The Project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The Project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated. Some aspects of this measure are already included in the Proposed Project.

Increasing the use of pedestrian improvements would further reduce Project-related VMT. The range of effectiveness of this measure as described by BCAG is from 0.5 percent to 5.7 percent.

Timing/Implementation: *Prior to approval of the Project.*

Enforcement/Monitoring: *City of Oroville*

TR-2: **Provide Traffic Calming Measures.** Providing traffic calming measures encourages people to walk or use bicycles instead of using a vehicle. This mode shift will result in a decrease in VMT.

Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others. Some aspects of this measure are already included in the Proposed Project.

Increasing the use of traffic calming measures would further reduce Project-related VMT. The range of effectiveness of this measure as described by BCAG is from 0 to 1.7 percent.

Timing/Implementation: *Prior to approval of the Project.*

Enforcement/Monitoring: *City of Oroville*

TR-3: **Contribute to a 20th Street Bicycle Facility.** Providing bicycle facilities reduces VMT by encouraging use of non-vehicular forms of transportation. Connecting to existing bicycle facilities would provide access to Project site residents to a larger network of facilities.

The Project applicant shall contribute a fair share portion of the cost toward construction of the bikeway. Because the Bicycle Transportation Plan does not specify whether the 20th Street bikeway would be a Class I or Class II facility, it is not known whether the bikeway would be on 20th Street or separate from the roadway. For the same reason, it is not known what the cost of the bikeway would be. As such, the Project's fair share portion shall be negotiated between the applicant and the City of Oroville.

Timing/Implementation: *Prior to approval of the Project.*

Enforcement/Monitoring: *City of Oroville*

Residual Impact After Mitigation

As noted above, development of the Project Site would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level which would be less than 85 percent of the baseline level would require a reduction of approximately 40 percent from pre-mitigation levels (1–[0.85÷1.45]=0.414). While the following measures would reduce the impact of the Project on VMT, implementation of mitigations needed to achieve a 40 percent reduction is not considered feasible. As a result, even with implementation of Mitigation Measures TR-1, TR-2, and TR-3, the impact of the Feather Ranch Project on VMT is considered to be significant and unavoidable.

Impact TR-3	Project implementation could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment).
Impact Determination	Less than Significant
Threshold	*Substantial increase in hazards due to geometric design feature or incompatible uses.*

Impact Discussion

As shown in Figure 2-2, the Project would be accessed via the existing 20th Street. Future access roadways to be developed as a part of the Project would include Feather Avenue and Biggs Avenue. The Project would also develop a number of internal streets. All new roadways would be required to be constructed according to the City of Oroville roadway standards. As such, the Project would not result in a substantial increase in hazards due to geometric design features or incompatible uses.

Mitigation Measures

No mitigation measures are required.

3.12.6 Cumulative Setting, Impacts, and Mitigation Measures

Cumulative conditions refer to the analysis scenarios that reflect future conditions represented by local and regional growth in approximately 20 years in the future. The Cumulative No Project condition represents a long-term future background condition. Future development of approved and planned land uses throughout the City of Oroville and County of Butte are assumed in this condition. The Cumulative No Project condition, therefore, serves as the baseline condition used to assess long-term Project-related traffic effects.

3.12.6.1 Traffic Volume Forecasts

As described in the Travel Forecasting section of the TIS, the BCAG Regional Travel Demand Model was used to develop forecasts of background increases in traffic volumes under Cumulative No Project conditions. The increases in traffic volumes reflect development of long-term future land use development.

Application of the methods described in the Travel Forecasting section results in the a.m. and p.m. peak hour traffic intersection volumes presented in Figure 3.12-5.

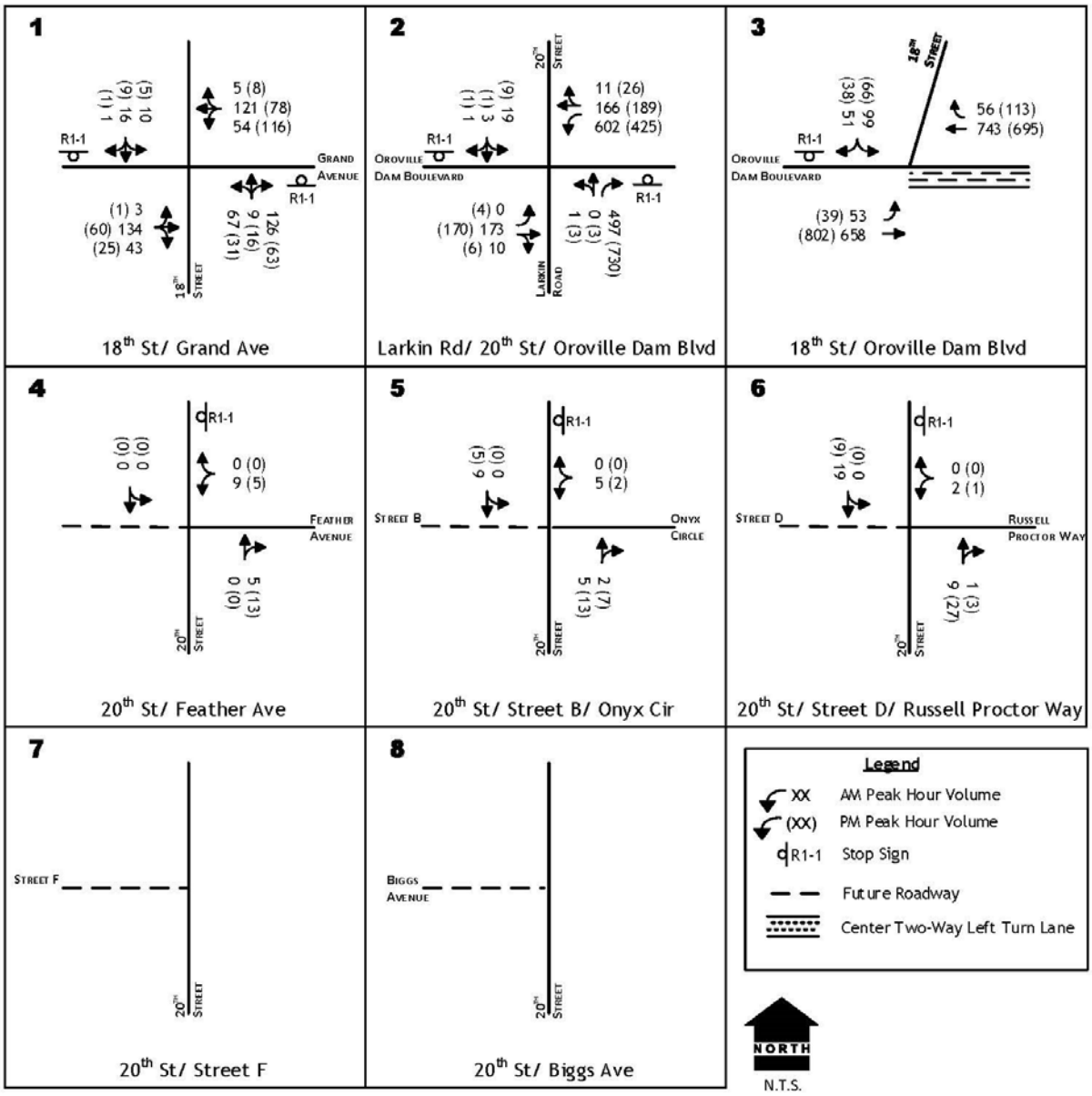
3.12.6.2 Intersection Levels Of Service

Table 3.12-7 provides the a.m. and p.m. peak hour LOS at each study intersection under Cumulative No Project conditions. The worksheets presenting the calculation of LOS are included in the technical appendix of the TIS.

Traffic volumes under Cumulative No Project conditions would be generally higher than under Existing conditions and, as a result, vehicle delay at study intersections under Cumulative No Project conditions would be higher than under Existing conditions.

Under Cumulative No Project conditions, four of the six study intersections would operate at acceptable LOS B or better during both the a.m. and p.m. peak hours and would be consistent with General Plan policy on LOS. No improvements are needed at these intersections to achieve acceptable LOS. Under Cumulative No Project conditions, two study intersections would operate at unacceptable LOS.

- At the intersection of Oroville Dam Boulevard and 20th Street, overall intersection LOS would be E during the a.m. peak hour and F during the p.m. peak hour. The northbound approach to this intersection would operate at LOS E with 49.0 seconds of delay during the p.m. peak hour. The southbound approach would operate at LOS F with 1,673.8 seconds of delay during the a.m. peak hour, and LOS F with 11,383.4 seconds of delay during the p.m. peak hour.



CUMULATIVE NO PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers
2610-28 RA 1/2/2023

Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-5. Cumulative No Project Traffic Volumes and Lane Configurations

- At the intersection of Oroville Dam Boulevard and 18th Street, the southbound approach would operate at LOS E with 40.9 seconds of delay during the a.m. peak hour.

Table 3.12-7. Level of Service – Existing Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1. Grand Ave & 18th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	6.0	A	5.8
EB Left-Turn			A	7.5	A	7.4
WB Left-Turn			A	7.8	A	7.6
NB Approach			B	13.4	B	11.7
SB Approach			B	14.1	B	13.3
2. Oroville Dam Blvd & 20th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			E	36.1	F	105.4
EB Left-Turn			A	0.0	A	7.7
WB Left-Turn			B	10.3	A	9.0
NB Approach			C	17.9	E	49.0
SB Approach			F	1,673.8	F	11,383.4
3. Oroville Dam Blvd & 18th St	Unsignalized SB Stop Sign	No				
Overall Intersection			A	4.0	A	2.0
EB Left-Turn			B	10.2	B	10.1
SB Approach			E	40.9	D	29.7
4. 20th St &Feather Ave	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	5.2	A	2.3
WB Approach			A	8.6	A	8.6
SB Approach			A	0.0	A	0.0
5. 20th St & Onyx Cr/St B	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	2.0	A	0.6
WB Approach			A	8.6	A	8.6
SB Approach			A	0.0	A	0.0
6. 20th St & Russell Proctor Way/St D	Unsignalized EB & WB Stop Sign	No				
Overall Intersection			A	0.6	A	0.2
WB Approach			A	8.7	A	8.7
SB Approach			A	0.0	A	0.0

Source: KDA 2023
Notes: LOS = Level of Service. Delay is measured in seconds per vehicle.
NB = northbound, WB = westbound, SB = southbound, EB = eastbound
St = Street, Ave = Avenue, Blvd = Boulevard

As shown in Table 3.12-7, both the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street would meet signal warrants under Cumulative No Project conditions. Signalization was considered to improve LOS at these intersections. However, signalization is considered to be infeasible because of:

- the relatively high traffic volumes on the westbound-to-southbound left-turn movement at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road, and
- the short space between the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street.

The relatively high traffic volumes on the left-turn movement would require substantial vehicle storage for the queuing. The short spacing between the two intersections would prevent construction of adequate vehicle storage. The lack of adequate vehicle storage would result in queuing from the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road interfering with the operation of the intersection of Oroville Dam Boulevard and 18th Street.

Installation of All-Way Stop-Control (AWSC) at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street was also considered. As described above for signalization, the problem of relatively high traffic volumes on the westbound-to-southbound left-turn movement at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road, and the short spacing between the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street also would be present with AWSC. Construction of adequate vehicle storage for the queuing from the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road would not be possible. As a result, installation of AWSC is also considered to be infeasible.

The TIS recommended the installation of a paired roundabout at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street. LOS at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street would be acceptable under Cumulative No Project conditions with implementation of the paired roundabout. This roadway improvement is considered necessary regardless of whether the Proposed Project were to be developed.

3.12.6.3 Cumulative Impacts and Mitigation Measures

Impact TR-4	Would the project, when considered with existing, proposed, planned, and approved development in the region, implementation of the proposed project would contribute to cumulative traffic volumes on local roadways that result in significant impacts to level of service and operations?
Impact Determination	Cumulatively Considerable and Significant and Unavoidable
Threshold	*Cumulatively contribute to cumulative traffic volumes on local roadways that result in significant impacts to level of service and operations.*

Impact Discussion

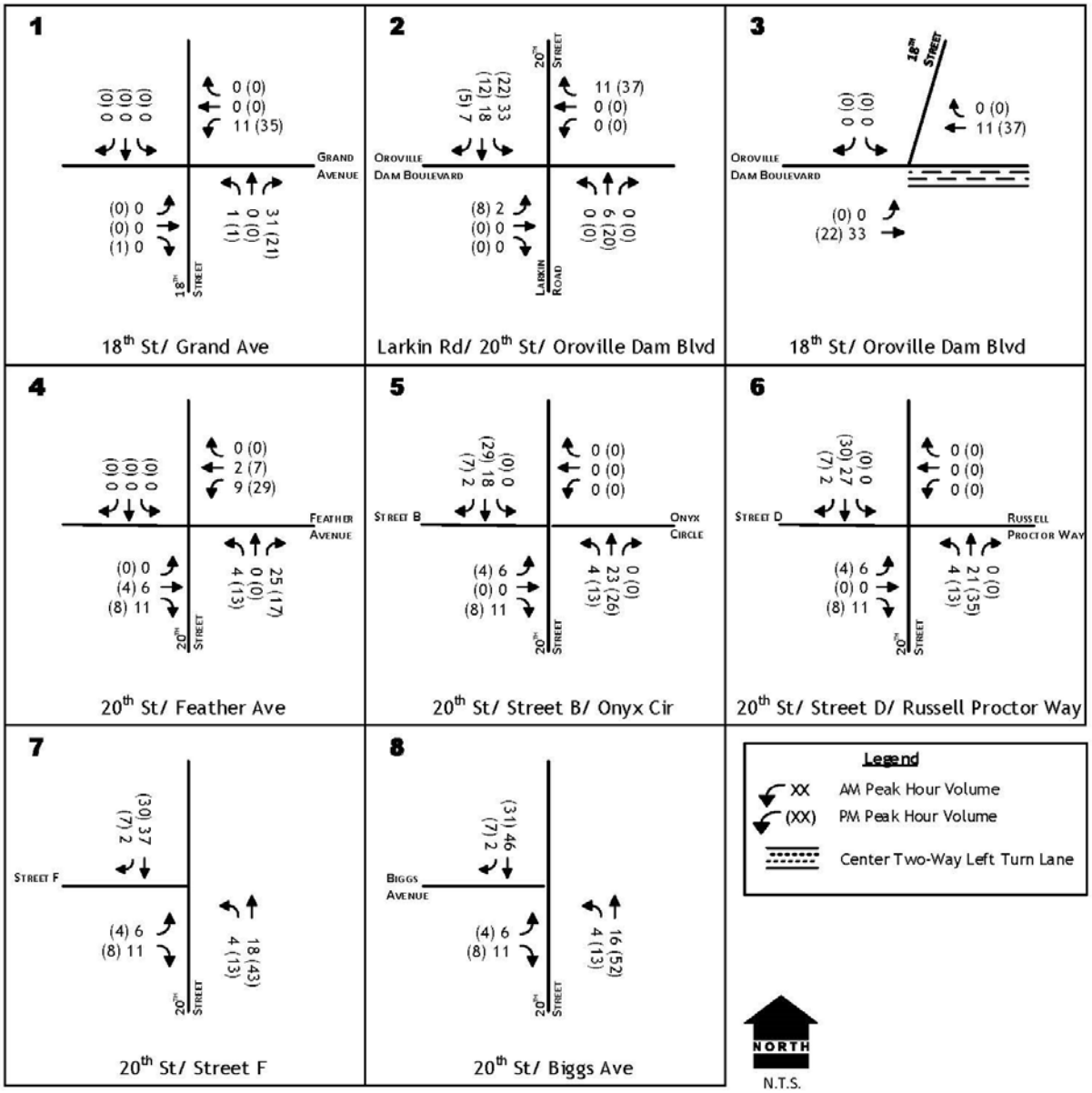
The analysis of Cumulative Plus Project conditions describes long-term future traffic operations assuming future development of planned land uses throughout the City of Oroville and Butte County, and also development of the Feather Ranch Project. Comparing traffic operations under Cumulative Plus Project conditions to traffic operations under Cumulative No Project conditions allows an identification of the long-term Project-related effects of the Proposed Project.

The development of the Feather Ranch Project would result in vehicle traffic to and from the Project Site. Methods used to estimate Project-related travel have been previously described in the Existing Plus Project Conditions section. Figure 3.12-6 displays the Project-related only traffic volumes for each study intersection in the a.m. and p.m. peak hours under long-term future Cumulative background conditions. Development of forecasts of future year background traffic volumes has been previously described in the Cumulative No Project Conditions. Cumulative Plus Project traffic volumes were calculated by adding Project-related-only traffic volumes under long-term future Cumulative conditions to Cumulative No Project background traffic volumes. Figure 3.12-7 displays the resulting Cumulative Plus Project traffic volumes anticipated for each study intersection in the peak hours.

Intersection Levels Of Service

Table 3.12-8 presents the a.m. and p.m. peak hour LOS' at each study intersection under Cumulative Plus Project conditions. The worksheets presenting the calculation of LOS are included in the technical appendix of the TIS.

Traffic volumes under Cumulative Plus Project conditions would be generally higher than under Cumulative No Project conditions and, as a result, vehicle delay under Cumulative Plus Project conditions would be higher than under Cumulative No Project conditions.



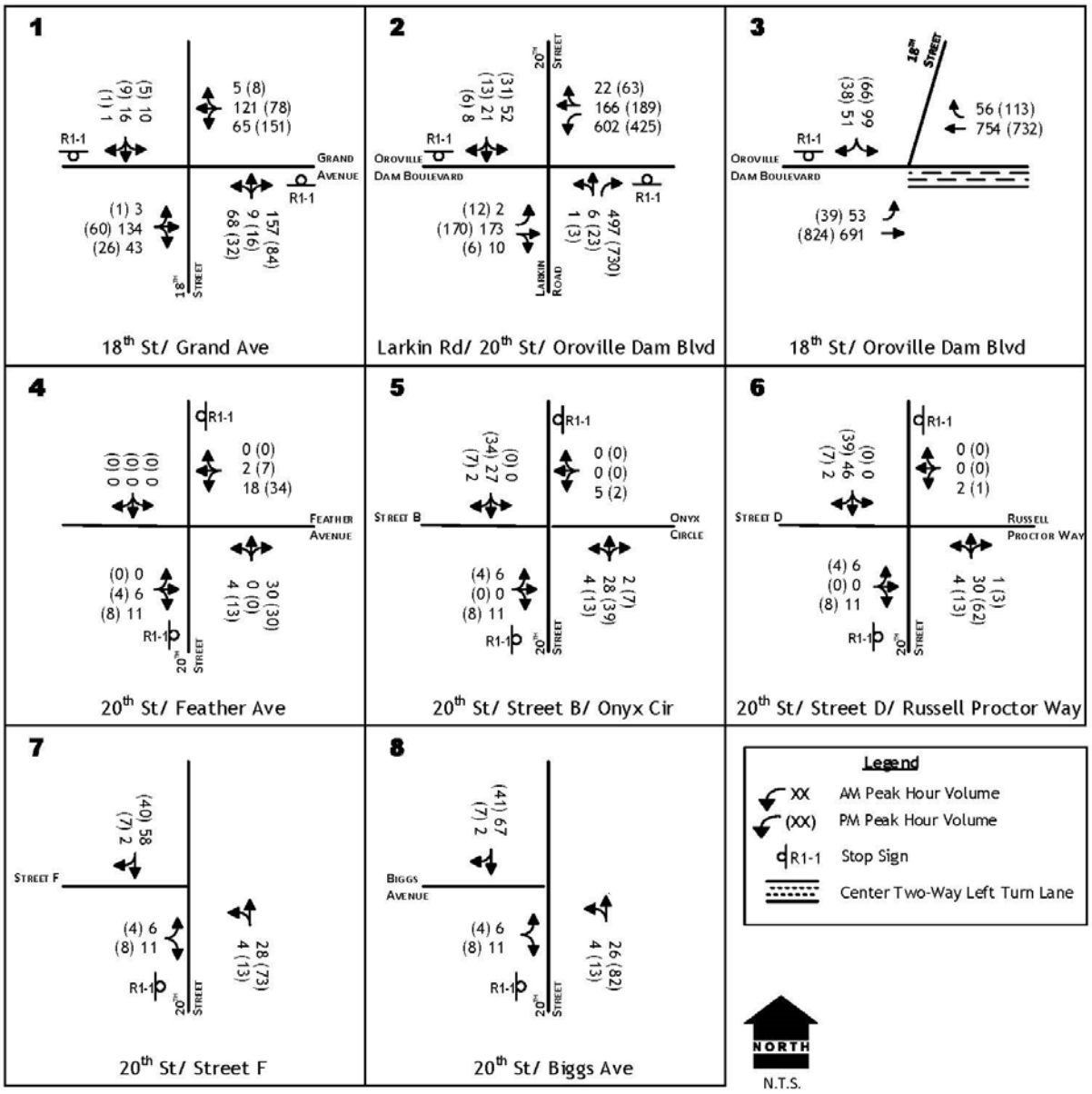
PROJECT ONLY TRAFFIC VOLUMES
CUMULATIVE BACKGROUND CONDITIONS

KD Anderson & Associates, Inc.
Transportation Engineers
2610-28 RA 1/2/2023

Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-6. Project Only Traffic Volumes Cumulative Background Conditions



CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers
2610-28 RA 1/2/2023

Source: KD Anderson and Associates, Inc.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.12-7. Cumulative Plus Project Traffic Volumes and Lane Configurations

2022-009/Feather Ranch Project

Under Cumulative Plus Project conditions, six of the eight study intersections would operate at acceptable LOS B or better during both the a.m. and the p.m. peak hours and would be consistent with General Plan policy on LOS. No improvements are needed at these intersections to achieve acceptable LOS.

Under Cumulative Plus Project conditions, two study intersections would operate at unacceptable LOS, which is considered to be inconsistent with the General Plan policy on LOS.

- At the intersection of Oroville Dam Boulevard and 20th Street, overall intersection LOS would be F during the a.m. peak hour. The northbound approach to this intersection would operate at LOS E with 49.9 seconds of delay during the p.m. peak hour. The southbound approach would operate at LOS F with 4,424.4 seconds of delay during the a.m. peak hour, and LOS F with 61.0 seconds of delay during the p.m. peak hour.
- At the intersection of Oroville Dam Boulevard & 18th Street, the southbound approach would operate at LOS E with 43.7 seconds of delay during the a.m. peak hour.

As shown in Table 3.12-8, both the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street would meet signal warrants under Cumulative Plus Project conditions. To improve LOS at these intersections, both signalization and AWSC were considered. However, both signalization and AWSC are considered to be infeasible. A description of the reasons signalization and AWSC are considered infeasible is presented previously under Cumulative No Project Conditions.

Table 3.12-8. Level of Service – Existing Plus Project Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1. Grand Ave & 18th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			A	6.6	A	6.4
EB Left-Turn			A	7.5	A	7.4
WB Left-Turn			A	7.8	A	7.7
NB Approach			B	14.0	B	12.3
SB Approach			B	14.9	B	14.8
2. Oroville Dam Blvd & 20th St	Unsignalized NB & SB Stop Sign	No				
Overall Intersection			F	239.9	D	26.8
EB Left-Turn			A	7.7	A	7.9
WB Left-Turn			B	10.3	A	9.0
NB Approach			C	19.3	E	49.9
SB Approach			F	4,424.4	F	61.0
3. Oroville Dam Blvd & 18th St	Unsignalized SB Stop Sign	No				
Overall Intersection			A	4.2	A	2.1
EB Left-Turn			B	10.2	B	10.3

Table 3.12-8. Level of Service – Existing Plus Project Conditions

Study Intersections and Approaches	Intersection Control	Signal Warrant Met?	AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
SB Approach			E	43.7	D	32.0
4. 20th St & Feather Ave						
Overall Intersection	Unsignalized EB & WB Stop Sign	No	A	4.9	A	5.9
EB Approach			A	8.7	A	8.7
WB Approach			A	8.9	A	9.2
NB Approach			A	7.2	A	7.2
SB Approach			A	0.0	A	0.0
5. 20th St & Onyx Cr/St B						
Overall Intersection	Unsignalized EB & WB Stop Sign	No	A	2.6	A	1.9
EB Approach			A	8.7	A	8.8
WB Approach			A	9.0	A	9.3
NB Approach			A	7.3	A	7.3
SB Approach			A	0.0	A	0.0
6. 20th St & Russell Proctor Way/St D						
Overall Intersection	Unsignalized EB & WB Stop Sign	No	A	1.9	A	1.5
EB Approach			A	8.8	A	8.9
WB Approach			A	9.1	A	9.5
NB Approach			A	7.3	A	7.3
SB Approach			A	0.0	A	0.0
7. 20th St & St F						
Overall Intersection	Unsignalized EB Stop Sign		A	1.6	A	1.4
EB Approach			A	8.8	A	8.8
NB Approach			A	7.3	A	7.3
8. 20th St & Biggs Ave						
Overall Intersection	Unsignalized EB Stop Sign		A	1.6	A	1.3
EB Approach			A	8.9	A	8.9
NB Approach			A	7.4	A	7.3

Source: KDA 2023
Notes: LOS = Level of Service. Delay is measured in seconds per vehicle.
NB = northbound, WB = westbound, SB = southbound, EB = eastbound
St = Street, Ave = Avenue, Blvd = Boulevard

LOS at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street would be acceptable under Cumulative Plus Project conditions with implementation of the TIS-recommended improvement to these intersections of a paired roundabout. Since the Project would add additional traffic to the area and affect these intersections,

substantially resulting in an LOS that is inconsistent and in conflict with the 2030 General Plan Policy P2.1, mitigation for the Project's impact is required under cumulative conditions. However, as discussed previously, as of July 1, 2020, LOS cannot be used as a determining factor in traffic impacts. As such, inconsistency with LOS policies is not an environmental impact and mitigation for this inconsistency is not required. However, the TIS provides recommendations for improving the LOS at the Oroville Dam Boulevard and 20th Street/Larkin Road intersection and the Oroville Dam Road/18th Street intersection as follows:

Recommended Improvement Traf-5: Install a Paired Roundabout at the Intersection of Oroville Dam Boulevard & 20th Street / Larkin Road and the Intersection of Oroville Dam Boulevard & 18th Street.

Under Cumulative Plus Project conditions, a paired roundabout should be installed at the intersection of Oroville Dam Boulevard and 20th Street/Larkin Road and the intersection of Oroville Dam Boulevard and 18th Street. This is the same improvement recommended for these two intersections under Cumulative No Project conditions.

Table 3.12- 9 shows that the Oroville Dam Boulevard and 20th Street and the intersection and the Oroville Dam Boulevard and 18th Street intersection would operate at acceptable LOS B with the TIS-recommended improvement.

Table 3.12-9. Level of Service – Cumulative Plus Project Conditions With Mitigation

Study Intersections (Overall Intersection)	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
2. Oroville Dam Blvd & 20th St	Roundabout	B	11.5	B	15.5
3. Oroville Dam Blvd & 18th St	Roundabout	B	10.5	B	12.2

Source: KDA 2023

Mitigation Measures

Implement Mitigation Measures TR-1, TR-2, and TR-3.

Residual Impact After Mitigation

As noted previously, development of the Project Site would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level that would be less than 85 percent of the baseline level would require a reduction of approximately 40 percent from pre-mitigation levels (1–[0.85÷1.45]=0.414). While mitigation measures TR-1, TR-2, and TR-3 would reduce the impact of the Project on VMT, implementation of mitigation measures needed to achieve a 40 percent reduction is not considered feasible. As a result, under cumulative conditions, even with implementation of Mitigation Measures TR-1, TR-2, and TR-3, the impact of the Feather Ranch Project on VMT would be cumulatively considerable and significant and unavoidable.

3.13 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for TCRs in the Project Area. The following analysis of the potential environmental impacts related to TCRs is derived primarily from the *Cultural Resources Inventory Report for the Feather Ranch Project* prepared by ECORP Consulting, Inc. (2022). The information provided below summarizes this report. The reader is also referred to Section 3.4 Cultural Resources, which provides additional information on Native American pre-contact and historic information.

3.13.1 Environmental Setting

3.13.1.1 Ethnography

When European-Americans first arrived in the region, Indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Archaeologists recognized the uniqueness of California's Indigenous groups and classified them as belonging to the California culture area. California was subdivided by these archaeologists into four subculture areas: Northwestern, Northeastern, Southern, and Central. The Central area encompasses the current Project Area and includes the Maidu and Konkow.

The current Project Area falls within the ethnographic tribal territory of the Maidu, located in the lower foothills of the western slopes of the Sierra Nevada and in the periphery of the Northern Sacramento Valley. The Maidu, on the basis of cultural and linguistic differences, have been differentiated into three major related divisions (ECORP 2022): the Northeastern (Mountain Maidu), Northwestern (Konkow), and Southern (Nisenan). Because many believe the Mountain Maidu and Konkow to be so closely related, ethnographers tended to group them as one.

The Konkow occupied territory located immediately adjacent and to the southwest of the Mountain Maidu, along the Feather and Sacramento rivers, to their southern boundary at the Sutter Buttes. The Konkow were primarily located in the lower elevations of the Sierra Nevada and along the valley floor. Tribal territories adjacent to the Maidu and Konkow included the Atsugewi and Yana to the north, the Nomlaki and Patwin to the west, Paiute and Washoe to the east, and the Nisenan to the south.

The Maidu and Konkow languages and associated dialects are members of the Maiduan language family of the California Penutian Linguistic Stock. Unlike the Maidu, whose dialects were unique to each of the four major regions of occupation, the Konkow spoke a large number of dialects, with each settlement area supporting more than one dialect (Shipley 1978). The Konkow called themselves ko'yo-mkawi, or *meadowland* (ECORP 2022).

Settlement patterns of the Maidu and Konkow were seasonal in nature. The Konkow inhabited a savanna-like habitat on the valley floor and in the lower elevations of the Sierra Nevada foothills. Resources exploited in this environment include wild rye, pine nuts, acorns, fish, and invertebrates (ECORP 2022). Summer hunting trips into the mountains provided deer meat, skins, and other items for food, clothing, and shelter for the winter months.

The village community was the primary settlement type among the Maidu and consisted of three to five small villages, each composed of about 35 members. Among the Mountain Maidu, village communities were well-defined and based on geography. In contrast, the Konkow were dispersed throughout the valley floor along river canyons and, as a result, village communities were less concentrated or definable. In terms of permanent occupation sites, both groups preferred slightly elevated locations that provided visibility of the surrounding area and were away from the water-laden marshes and meadows (ECORP 2022). The Mechoopda Village, formerly located near downtown Chico, was home to many Maidu well into historical times.

Among the villages, the male occupant of the largest kum, or semi-subterranean earth-covered lodge, governed the community. Two other types of ethnographically documented structures in use included the winter-occupied conical bark structure and the summer shade shelter (ECORP 2022).

Clothing, accessories, and other personal items were manufactured using elaborate basket-weaving techniques, shell and bone ornamenting, and by incorporating feathers, game skins, plant roots, and stems into objects. Shell, in the form of beads for currency or as valuable jewelry, was very desirable and was exchanged for food, obsidian, tobacco, and pigments. Contact between the Maidu and Western culture was initiated as early as 1808 by Spanish explorers and fur trappers. The effects of the introduction of new diseases notwithstanding, native cultures remained essentially unchanged until after the discovery of gold at Coloma in 1848. An outbreak of malaria in 1833, the 1848 Gold Rush, and subsequent massacre of Native Americans resulted in an upset of the ecological and social balance of local Native societies. As a direct result, aboriginal populations plummeted from 8,000 in 1846 to only 900 in 1910 (ECORP 2022).

In 1855, the U.S. Congress authorized treaties to set aside reservation lands for Native Americans, after which some Konkow were relocated to the Nome Lackee reservation in present-day Tehama County. Descendants of the Maidu and Konkow have revitalized their ancestral heritage and have dissociated into the Enterprise, Berry Creek, and Mooretown rancherias in Oroville; the Mechoopda Indian Tribe in Chico; the United Maidu Nation and Susanville Rancheria in Susanville; and the Greenville Rancheria in Plumas County.

3.13.2 Known Tribal Cultural Resources in the Project Area

Existing NEIC records document that all of the Project Site has been subjected to prior archeological investigation. Per the NEIC records, no prehistoric or historic era sites have neem documented in the Project site (ECORP 2022). Additionally, The City of Oroville notified the 14 Tribes of the Proposed Project on August 18, 2022. One of these Tribes, Mooretown Rancheria, replied and has indicated that there were known TCRs on the Project Site.

3.13.3 Regulatory Framework

3.13.3.1 Federal

National Historic Preservation Act

The NHPA) requires that the federal government list significant historic resources on the NRHP, which is the nation's master inventory of known historic resources. The NRHP is administered by the NPS and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a historic district can also be included in the NRHP.[1] The criteria for listing in the NRHP include resources that:

a) are associated with events that have made a significant contribution to the broad patterns of history;
b) are associated with the lives of persons significant in our past;
c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d) have yielded or may likely yield information important in prehistory or history.

Additionally, the NRHP guidelines describe a type of cultural significance for which properties may be eligible for inclusion in the NRHP. A property with traditional cultural significance will be found eligible for the NRHP because it is associated with cultural practices or beliefs of a living community that:

a) are rooted in that community's history, and
b) are important in maintaining the continuity of the cultural identity of the community.

This type of significance is grounded in the cultural patterns of thought and behavior of a living community and refers specifically to the association between their cultural traditions and a historic property.

3.13.3.2 State

Assembly Bill 52

Effective July 1, 2015, AB 52 amended CEQA to require that:

[1] A [historic] district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development (ECORP 2022).

1. a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and

2. for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe.

Topics that may be addressed during consultation include TCRs, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and Project alternatives.

Pursuant to AB 52, Section 21073 of the Public Resources Code defines California Native American tribes 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 the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the Public Resource Code defines TCRs for the purpose of CEQA as:

1) Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

   a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
   b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
   c. a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

In accordance with Section 21082.3(c)(1) of the PRC,

> "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is 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 subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information."

Therefore, the details of Tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes.

3.13.3.3 Local

Oroville 2015 General Plan

The Open Space, Natural Resources, and Conservation Element of the Oroville General Plan, adopted in 2015, is dedicated to preserving and improving the quantity, quality, and character of open space in Oroville. The Element includes Section H, which addresses cultural resources in the City. Cultural resources in Oroville include both prehistoric and historic resources in the realms of archaeology, paleontology and historic structures, sites and areas that played important roles in local history. The following goals and policies from the Cultural Resources section of the Element pertain to Project development:

Goal OPS-14: Preserve Oroville's cultural resources, including archaeological, historic and paleontological resources, for their aesthetic, scientific, educational and cultural values.

Policies

P14.1: Require consultation with the Northeast Information Center of the California Historical Resources Information System and completion of a records search as part of review of proposed development projects to determine whether the project site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources and the necessity of further investigation.

P14.2: Require applicants for projects identified by the Northeast Information Center as potentially affecting cultural resource sites or in need of further investigation to hire a consulting archaeologist or historian (as applicable) to conduct inventory and evaluation studies and develop a cultural resources mitigation plan and monitor the project to ensure that mitigation measures are implemented, as necessary.

P14.3: Require that areas found during construction to contain significant historic or prehistoric archaeologic artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation. Require that historic or prehistoric artifacts found during construction be examined by a qualified consulting archaeologist or historian to determine their significance and develop appropriate protection and preservation measures as necessary.

P14.7: If cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

P14.8: If human remains are located during any ground disturbing activity, work shall stop until the County Coroner has been contacted, and, if the human remains

are determined to be of Native American origin, the NAHC and most likely descendant have been consulted.

P14.9: Encourage development to avoid impacts to burial sites including:

- *Designing or clustering development to avoid archaeological deposits that typically contain human remains and to avoid any known cemeteries or other concentrations of human remains.*
- *Dedicating permanent conservation easements if subdivisions and other developments can be planned to provide for such protective easements.*

3.13.4 Environmental Impacts

3.13.4.1 Thresholds of Significance

Following Appendix G of the CEQA Guidelines, TCR impacts are considered to be significant if the Project would result in any of the following:

1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    a. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k), or
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC § 5024.1. In applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?

3.13.4.2 Methods of Analysis

As a part of the Cultural Resources Inventory Report, ECORP requested a records search for the property at the NEIC of the CHRIS at California State University, Chico on February 15, 2022. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. The records search was completed by NEIC staff and returned to ECORP on March 10, 2022. In addition to the official records and maps for archaeological sites and surveys in Butte County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for Butte County; The National Register Information System; California Historical Landmarks; California Historical Landmarks; California Points of Historical Interest; Directory of Properties in the Historical Resources Inventory; Caltrans Local Bridge Survey; Caltrans State Bridge Survey; and Historic Spots in California.

Other references examined include a RealQuest Property Search and historic GLO land patent records. Historic maps reviewed include the following:

- 1856 BLM GLO Plat map for Township 19 North Range 3 East;
- 1891 USGS Chico, California topographic quadrangle map (1:250,000 scale);
- 1912 USGS Oroville, California topographic quadrangle map (1:31,680 scale);
- 1944 USGS Oroville, California topographic quadrangle map (1:62,500 scale);
- 1949 USGS Oroville, California topographic quadrangle map (1:62,500 scale); and
- 1970 (1973 edition) USGS Oroville, California topographic quadrangle map (1:24,000 scale).

ECORP reviewed historic aerial photos taken in 1952 and 1969 and more recent aerials from 1984, 1998, 2005, 2009, 2010, 2021, 2014, 2016, and 2018 for any indications of property usage and built environment. ECORP attempted a search within a local historical registry, but no such registry was available for Oroville.

Sacred Lands File Coordination Methods

In addition to the records search, ECORP contacted the California NAHC on February 16, 2022 to request a search of the Sacred Lands File for the Project Area. This search determines whether the California Native American tribes within the Project Area have recorded Sacred Lands, because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of Tribal resources. In requesting a search of the Sacred Lands File (SLF), ECORP solicited information from the Native American community regarding TCRs, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The results from the NAHC SLF search indicated a *positive* result for cultural resources on the Project Site. The response letter recommended the City contact the local tribes in the Project Vicinity to seek Tribal consultation. The City of Oroville has requested Tribal consultation from 14 local tribes in the area, with one response received. On August 25, 2022, the Mooretown Rancheria responded to the City's request for consultation indicating they were unaware of any known TCR's on the Project Site.

Other Interested Party Consultation Methods

ECORP mailed letters to the Butte County Historical Society on February 16, 2022 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

Field Methods

ECORP subjected the Project Area to an intensive pedestrian survey on March 18, 2022 under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (ECORP 2022) using 15-meter transects. ECORP spent one person-day in the field. During the survey, ECORP archaeologists examined the ground surface for indications of surface or subsurface cultural resources. The archaeologists inspected the general morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or

ditches. Whenever possible, the archaeologists examined the locations of subsurface exposures caused by factors such as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

3.13.5 Project Impacts and Mitigation Measures

Impact TCR-1	Project implementation would cause a substantial adverse change in the significance of a Tribal Cultural Resource
Impact Determination	Less than Significant with Mitigation
Threshold	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:* • *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or* • *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?*

Impact Discussion

Based on the results of the records search and literature review, all of the property has been surveyed for cultural resources and according to the NAHC response letter dating May 4, 2022, the SLF search was *positive* for cultural resources in the Project Area. The City of Oroville contacted the 14 tribes on the list supplied by the NAHC. On August 25, 2022, the City received a response from one of the 14 tribes, the Mooretown Rancheria, indicating that the were unaware of any known TCRs on the Project Site. There exists a low to moderate potential for buried pre-contact archaeological sites in the Project Area due to its proximity to the Feather River, which is 1.6 miles to the east. Pre-contact archaeological sites are likely to be located along such perennial waterways. There was an unnamed creek or ephemeral drainage adjacent to the Project Area, depicted on 1890s maps; therefore, there is a low to moderate potential for encountering intact buried deposits within the Project Area. In addition, the Thermalito Forebay and

Oroville Dam was constructed north of the Project Area in the 1960s and changed the hydrology of the local waterways.

ECORP conducted the pedestrian survey on March 17, 2022 and observed that the land within the Project Area has been lightly utilized throughout the years. The Project Area contained gently rolling terrain west of 20th Street with overgrown grasses and weeds ranging from 1 to 2 feet tall. Overall, the surface visibility throughout the APE was poor to fair due primarily to the overgrown grasses and some exposed soil. The average surface visibility was 10 to 30 percent in most areas. Modern dirt access roads and fire breaks are present along the peripheries of the Project Area.

ECORP inspected rodent burrows and back dirt piles throughout the APE; however, they did not identify cultural materials or evidence of habitation from the exposed soil. As a result of the field survey and Tribal consultation, no resources were identified within the Project Area. Therefore, no known Historic Properties under Section 106 of the NHPA or Historical Resources under CEQA will be affected by the Proposed Project. However, until the lead agencies concur with the identification and evaluation of eligibility of cultural resources, no Project activity should occur.

There always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. Therefore, Mitigation Measure CUL-1 has been included to reduce the potential impact to historical resources to be less than significant with mitigation incorporated.

Mitigation Measures

Implementation of Mitigation Measure CUL-1.

Residual Impact After Mitigation

Impacts would be less than significant after mitigation.

3.13.6 Cumulative Setting, Impacts, and Mitigation Measures

3.13.6.1 Cumulative Setting

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. While this is helpful for cultural resources cumulative impacts, it does not necessarily provide a specific cumulative impact setting for these resources as the impacts to these resources are generally more site-specific. Therefore, the cumulative setting for TCRs includes the Project Site as well as the remaining undeveloped areas surrounding the Project Site where the impacts of urbanization and potential for impacts to cultural resources are considered most serious. Cumulative impacts on TCRs are primarily the result of the area's urbanization and conversion of undisturbed land to urban use. Developments and planned land uses, including the Proposed Project, would cumulatively contribute to impacts to known and unknown TCRs in the area. As previously discussed, Section 3.13.1 Environmental Setting provides an overview of TCRs and the history of the region.

3.13.6.2 Cumulative Impacts and Mitigation Measures

Impact TCR-2	Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, could result in cumulative impacts to tribal cultural resources?
Impact Determination	Less than Cumulatively Considerable
Threshold	*Result in cumulative impacts to tribal cultural resources.*

Impact Discussion

As mitigated, TCRs impacts associated with the Project will be reduced to a less than significant level. While it is possible that grading and development will result in the discovery of unknown resources, mitigation measures and state and federal laws already in place will set in motion actions designed to mitigate these potential impacts. The Project is adjacent to existing relatively sparse residential and commercial developments. Future development of the area may also affect TCRs. However, mitigation proposed in this section, and existing federal and state laws would reduce the Project's potential cultural resources impacts to a less than significant level. Additionally, The City of Oroville notified 14 local tribes in the area of the Proposed Project on February 15, 2022. None of these tribes has indicated that there were known TCRs on the Project Site. Therefore, the Project's impact is considered less than cumulatively considerable.

Cumulative Mitigation Measures

None required.

3.14 Utilities and Service Systems

This section describes the environmental setting for utilities and service systems, including the existing site conditions, regulatory setting, the impacts on utilities and service systems that would result from the Proposed Project, and the mitigation measures that would reduce these impacts. This section does not further address impacts found to be less than significant in the IS prepared for this Project (Appendix 1.0). These impact areas include the following:

- Require or result in the relocation or construction of new or expanded water, or storm water drainage, electric power, natural gas, or telecommunications facilities Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Through the IS analysis, it was determined that the Project may have an impact to wastewater treatment capacity and collection facilities. Additionally, comments received during the public review period for the IS resulted in the need to reexamine the Project's impact on storm water drainage facilities. As such, both of these areas are discussed in the following analysis. Refer to Appendix 1.0 and Section 3.0 of this DEIR for additional details on issues eliminated from further review in this DEIR.

3.14.1 Environmental Setting

3.14.1.1 Wastewater Services

The City of Oroville and the Planning Area are served by three wastewater collection agencies: the City of Oroville, TWSD, and the Lake Oroville Area Public Utility District. These three agencies have a Joint Powers Agreement with the Sewerage Commission-Oroville Region (SC-OR) to handle wastewater treatment and disposal (City of Oroville 2015a).

The Project Site is within the TWSD service area for wastewater collection. Developers are required to either upgrade existing infrastructure or install new infrastructure for new development within TWSD's SOI. TWSD provides wastewater collection services to approximately 1,985 customers or approximately 2,650 Equivalent Dwelling Units. Wastewater dry weather flows average 0.41 million gallons per day (mgd) presently and are expected to grow to 0.67 mgd within the next 20 years. Monthly instantaneous Peak Wet Weather Flows are 4 mgd. TWSD's collection system consists of 40 miles of sanitary sewer line with approximately 560 utility access holes and is generally in adequate condition. TWSD's collection system discharges into the SC-OR west interceptor pipe for treatment at their plant. On average, dry weather flows are at approximately 30 percent capacity and wet weather flows are at approximately 70 to 80 percent capacity. The system experiences the highest level of inflow and infiltration impact at the east

trunk line DURING extreme wet weather events. The east trunk line has almost overflowed during rainy days during major storm events. (City of Oroville 2015a).

SC-OR is responsible for the operation and maintenance of the wastewater treatment plant and three interceptor lines (or trunk lines) that collect wastewater discharges from the three member entities. Additionally, SC-OR is responsible for meeting the pollution discharge and water quality standard defined by the federal NPDES permit and State Regional Water Quality Waste Discharge Requirements.

SC-OR provides sewerage service for the City of Oroville, Lake Oroville Area Public Utility District, and TWSD, serving a population of approximately 40,855. The permitted average dry weather flow capacity of the SC-OR Wastewater Treatment Facility (WTF) is 6.5 mgd (RWQCB 2021). Based on the SC-OR Monthly Flows Report, the average daily wastewater flow at the treatment facility was 2.77 mgd in 2021. TWSD accounted for approximately, 0.507 mgd of this amount (SC-OR 2022). The highest daily wastewater flows during 2021 was 4.417 mgd, in December, leaving a surplus capacity of approximately 2.08 mgd under average dry weather flow (SC-OR 2021).

To plan for future growth, SC-OR recently completed a master plan, which provides for growth in Oroville over the next 20+ years. The plan calls for a $45,000,000 modification to be completed as growth occurs and as new environmental regulations are imposed. New users will pay for plant expansions via connection fees, while plant modifications required by new regulations will be paid for by existing ratepayers using State Revolving Fund loans or bonds (SC-OR 2022).

The Proposed Project Site is currently vacant with no wastewater service infrastructure. The Project would construct internal sewage infrastructure to accommodate the increase in sewage associated with the residential units proposed. Each building onsite would consist of an underground sewer lateral, all connecting to a site-specific sewer main, prior to connecting to the existing sanitary sewer main within 20th Street, immediately east of the Project Site.

3.14.1.2 Storm Drainage

The City of Oroville currently maintains approximately 60 miles of storm water drainage pipes and trenches, thousands of utility access holes and drop inlets, plus six regional detention basins. Storm water drainage infrastructure is essential to the safety of Oroville's citizens and their property. The City's storm water infrastructure is designed and engineered to protect residents in the occurrence of an extreme hydrologic event or more commonly known as a 100-year storm event (City of Oroville 2022b).

Information provided by the Butte County Department of Public Works in response to the IS public review indicate that the Project is located within the 2007 Thermalito Master Drainage Plan (TMDP, Butte County 2009). The TMDP provides drainage information in the Project Area including a consistent area-wide analysis. According to the TMDP, the Project Site is located in area FA-06 of the Fresno Avenue Fork watershed, which is next to the Ruddy Creek watershed. Area FA-06 covers approximately 63.5 acres. The Fresno Avenue Fork, Ruddy Creek (A-4) drainage basin is generally west of 18th Street and mainly south of Grand Avenue. Drainage from this 420-acre basin joins the other forks of Ruddy Creek south of Fresno Avenue near 18th Street. The basin has newer high-density residential development (Butte County 2009). The TMDP includes areas of deficiencies within the exiting drainage system of the Fresno Avenue Fork,

Ruddy Creek (A-4) drainage basin and projects and estimated costs to remove these deficiencies. Projects in the Fresno Avenue Fork include improvements to the culvert under 18th Street near the intersection of 18th Street and Oro Dam Boulevard, and increasing conveyance in channels north and east of the intersection of Grand Avenue and 21st Street (Butte County 2009).

3.14.2 Regulatory Setting

3.14.2.1 Local

City of Oroville 2030 General Plan

The Oroville 2030 General Plan contains numerous policies regarding wastewater collection and treatment. All new development would be required to comply with the General Plan Public Facilities and Services Element policies. Goals and policies related to wastewater and stormwater drainage and applicable to the proposed residential development are as follows:

Goal PUB-7: Collect, treat and dispose of wastewater in ways that are safe, sanitary, environmentally acceptable, and financially sound.

P6.10: Encourage the use of drought-resistant landscaping and the use of reclaimed wastewater for agriculture and landscape irrigation supply water. Ensure that all reclaimed wastewater complies with State wastewater treatment and reclamation regulations and standards.

P7.3: Require all development that is in areas that are currently served or could be feasibly served by sewers to be connected to a sewer conveying wastewater to the Sewerage Commission – Oroville Region's (SC-OR) treatment plant.

P7.4: The approval of new urban development shall be conditioned on the availability of adequate long-term capacity for wastewater conveyance, treatment and disposal sufficient to service the proposed development. The agencies that provide services to new development will be primarily responsible for making determinations regarding adequate availability.

P7.5: If downstream lines are determined by the City to be inadequate, the developer shall provide facilities to convey the additional sewage expected to be generated by the development. New development shall not be permitted until adequate facilities are available to convey the additional sewage associated with the development. The developer must demonstrate that adequate facilities will be available at the time of Final Map approval.

P7.10: Ensure that all new and repaired sewer collection and transmission systems are designed and constructed in such a manner as to minimize potential inflow and infiltration.

P7.11: Installation of sewer lines should occur concurrently with construction of new roadways to maximize efficiency and minimize disturbance from construction activity.

Goal PUB-8: Collect, store, and dispose of stormwater in ways that are safe, sanitary, environmentally acceptable, and financially sound.

P8.1: Use a site-specific stormwater drainage plan or the stormwater drainage master plan to be prepared under A8.1 to determine whether to require storm drainage analysis for projects within the Planning Area, and, if necessary, make storm drainage improvements a condition of development approval.

P8.3: Encourage the utilization of Best Engineering Practices for stormwater collection and disposal.

P8.4: Require local storm drainage improvements be built to carry appropriate design-year flows resulting from buildout of the General Plan. Design storm drainage facilities for 2-, 10-, and 100-year discharges.

P8.5: Require that developers pay their fair share for construction of off-site drainage improvements, as determined by a site-specific stormwater drainage plan or the stormwater drainage master plan to be prepared under A8.1.

P8.8: Offer site-specific drainage plans prepared by applicants for peer review prior to review and approval by City Council.

P8.9: Require installation of temporary drainage facilities as necessary during construction activities in order to adequately mitigate stormwater impacts.

P8.10: Require the installation of stormwater collection systems concurrently with construction of new roadways to maximize efficiency and minimize disturbance due to construction activity.

3.14.3 Environmental Impacts

3.14.3.1 Thresholds of Significance

The following thresholds of significance are based on Appendix G to the CEQA Guidelines. For purposes of this EIR, implementation of the Proposed Project would be considered to have a significant adverse impact on wastewater utilities if it would result in any of the following:

Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

3.14.3.2 Methods of Analysis

3.14.3.3 Project Impacts and Mitigation Measures

Impact UTIL-1:	Project implementation could require or result in the relocation or construction of new or expanded wastewater treatment or storm drainage facilities, the construction or relocation of which could cause significant environmental effects.
Impact Determination:	Less than Significant
Thresholds:	*Significant adverse environmental effect caused by the requirement or resulting from the relocation or construction of new or expanded wastewater treatment or storm drainage facilities.*

Impact Discussion

Wastewater

The average wastewater per person per day for a typical home is estimated to be between 45 and 90 gpd with an average of 70 gpd based on U.S. standards for water usage and sewage strength (Pollution Control Systems, Inc. 2022). Using this information and the projected population of 430 residents for the Project, the average wastewater flow would be between 19,350 and 38,700 gpd with an average of 30,100 gpd (0.0301 mgd) from the Project. While this is an estimate, it does provide an indication of how much wastewater would be produced by the Project and if this wastewater can be accommodated by the SC-OR WTF.

The Proposed Project Site is currently vacant with no wastewater service infrastructure. The Project would construct internal wastewater infrastructure to accommodate the increase in sewage associated with the residential units. All future uses would connect to onsite underground sewer infrastructure, prior to connecting to the existing TWSD wastewater collection system within 20th Street, immediately east of the Project Site. TWSD confirmed in their letter to the Project, dated July 12, 2022, that TWSD is able to serve the Project (TWSD 2022).

TWSD provides sewer collection services to Project Site which is then treated at the SC-OR WTF. The permitted average dry weather flow capacity of the SC-OR WTF is 6.5 mgd (RWQCB 2021). Based on the SC-OR Monthly Flows Report, the average daily wastewater flow at the treatment facility was 2.77 mgd in 2021. TWSD accounted for approximately, 0.507 mgd of this amount (SC-OR 2022). The highest daily wastewater flows at the SC-OR facility during 2021 was 4.417 mgd in December, leaving a surplus capacity of approximately 2.08 mgd under average dry weather flow (SC-OR 2021). The Proposed Project is anticipated to increase wastewater flows and may affect the local collection and treatment system

facilities. However, the Project's estimated wastewater between 19,350 and 38,700 gpd would not exceed the surplus capacity of 2.08 mgd at the SC-OR WTF.

Consistent with 2030 General Plan policies P7.3, P7.4 and P7.5, the Project is required to contribute to the implementation of system improvements to ensure wastewater collection and treatment facilities have sufficient capacity to serve the Project.

TWSD has determined that sewer collection service can be provided by TWSD. While it appears that SC-OR has adequate capacity at the WTF to serve the Project, because SC-OR requires a Capacity Impact Study as a part of a service agreement for a new project, this WTF capacity will be assured. These conditions, as well as 2030 General Plan policies P7.3, P7.4, and P7.5, will ensure that the Project can be served. As such, the Project would have a less than significant impact in this area.

Storm Drainage Facilities

Storm drainage improvements for the Project will include the installation of underground storm drain pipes and storm water leach trenches beneath the curb, gutter and sidewalk to detain and percolate additional runoff generated by the Project improvements. See Figures 2-5 through 2-8 for storm drain trench locations and detail. The storm drain trenches are approximately 15 feet wide and extend 7 feet below ground surface. The design includes perforated piping to direct storm water into the trenches. The trenches include a thickness of 7 feet of 2- to 4-inch cobbles, and a trench perimeter wrapping (top, sides and bottom) of geo fabric to eliminate fine particles. The Project storm drain system will connect to the existing City of Oroville storm drain facilities in 20th Street. The trenches are designed to capture Project-Site stormwater to allow the metering of storm water to not exceed the pre-development stormwater runoff level. As such, the Project would have a less than significant impact in this area.

Mitigation Measures

No mitigation measures are required.

Impact UTIL-2:	Project implementation could result in a determination by the wastewater treatment provider 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.
Impact Determination:	Less than Significant
Threshold:	*Inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.*

Impact Discussion

As discussed previously, TWSD provides sewer collection services to Project Site which is then treated at the SC-OR WTF.

As a part of a new project seeking service, SC-OR requires, a site-specific Capacity Impact Study. SC-OR has determined that this is necessary to provide for the orderly planning and construction of additional collection system capacity needed to serve a proposed development. If the Capacity Impact Study determines that facility capacity must be increased to accommodate the development, the developer will be required to negotiate a Mitigation Agreement with SC-OR that will describe tasks for the developer to complete to receive sewer service to the Project.

Consistent with 2030 General Plan policies P7.3, P7.4, and P7.5, the Project is required to contribute to the implementation of system improvements to ensure wastewater collection and treatment facilities have sufficient capacity to serve the Project.

TWSD has determined that sewer collection service can be provided by TWSD for the Project. While it appears that SC-OR has adequate capacity at the WTF to serve the Project, because SC-OR requires a Capacity Impact Study as a part of a service agreement for a new project, this WTF capacity will be assured. These conditions as well as 2030 General Plan policies P7.3, P7.4 and P7.5 will ensure that the wastewater treatment capacity is available. As such, the Project would have a less than significant impact in this area.

Mitigation Measures

No mitigation measures are required.

3.14.4 Cumulative Setting, Impacts, and Mitigation Measures

Section 3.0 provides the baseline for cumulative setting and is based on General Plan projections. These General Plan projections are developed, in part, from the existing land use designations identified in the General Plan. As shown in Table 3.2, the anticipated growth in the City is expected to result in 9,685 new housing units, 7,026,000 sf of new industrial uses, and 12,168,000 sf of new commercial uses within the existing City limits by 2030 (City of Oroville 2015a).

3.14.4.1 Cumulative Impacts and Mitigation Measures

Impact UTIL-3:	Would Implementation of the proposed project, along with any foreseeable development in the project vicinity, result in cumulative impacts to wastewater collection and treatment or storm drainage facilities or providers?
Impact Determination:	Less than Cumulatively Considerable
Threshold:	*Result in cumulative impacts to wastewater collection and treatment facilities or providers.*

Impact Discussion

As discussed in Impacts UTIL-1 and 2, the wastewater collection and treatment impacts associated with the Project would result in a less than significant impact. Because SC-OR requires a Capacity Impact Study

as a part of new project development, existing and future capabilities of the SC-OR WTF to treat wastewater can be determined prior to exceeding the WTF capacity. This, as well as 2030 General Plan policies P7.3, P7.4, and P7.5, will ensure that the wastewater collection and treatment capacity is available for any projects in the vicinity in the foreseeable future. Therefore, the Project's impact is considered less than cumulatively considerable.

3.14.4.2 Cumulative Mitigation Measures

None required.

4.0 OTHER REQUIRED CEQA ANALYSIS

This section discusses additional topics statutorily required by CEQA, including growth-inducing impacts, significant environmental effects that cannot be avoided if the Proposed Project is implemented, and, significant irreversible environmental changes.

4.1 Growth-Inducing Impacts

According to CEQA Guidelines Section 15126.2(e), a project may induce economic or population growth, or additional housing, either directly or indirectly, in a geographic area if it would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth, such as extensions or expansion of infrastructure. CEQA does not automatically consider growth inducement to be a significant, adverse impact. Typically, the growth-inducing potential of a project is considered to be significant if it fosters growth in excess of what is assumed in adopted planning document. In December 2019, the California OPR updated the growth inducement question in the CEQA IS (CEQA Guidelines Appendix G) to clarify that effects from substantial growth inducement would be significant if the impacts were ***unplanned*** (emphasis added).

The State CEQA Guidelines do not provide specific methods for evaluating growth inducement and state that growth in any area is not "necessarily beneficial, detrimental, or of little significance to the environment" (State CEQA Guidelines Section 15126.2[e]). CEQA does not require separate mitigation for growth inducement as it is assumed that these impacts are already captured in the analysis of environmental impacts (see Chapter 3.0). According to the State CEQA Guidelines, a project would have potential to induce growth if it would result in either of the following.

- Remove obstacles to unplanned population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in a restrictive zoning or general plan land use designation.
- Result in economic expansion and population growth through employment opportunities and/or construction of new housing.

4.2 Significant and Unavoidable Impacts

Section 15126.2(c) of the State CEQA Guidelines require that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less than significant level. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should also be described.

A significant and unavoidable impact 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. Most of the impacts of the Proposed Project would be less than significant or would be mitigated to a less than significant level. The impacts summarized below are those that would remain significant and unavoidable after mitigation.

The Project would result in a significant and unavoidable safety hazard impact and a cumulatively considerable and significant and unavoidable safety hazard impact for people residing or working in the Project Area because the Project is located within the OMA B1 and B2 Compatibility Zones. The only mitigation possible would be to either eliminate the use of the airport or move the Project to a location outside of the B1 and B2 Compatibility Zones. Neither of these mitigations are feasible. As such, there is no feasible mitigation possible to mitigate the potential airport safety impacts.

The Project would result in a significant and unavoidable safety hazard impact and a cumulatively considerable and significant and unavoidable traffic noise impact. As shown in Table 3.9-9, the roadway segment of 20th Street between Biggs Avenue and Feather Avenue would experience an increase of more than 5.0 dBA CNEL over existing conditions, which is beyond the City of Oroville noise standard. Similarly, the segment of Feather Avenue east of 20th Street would also experience an increase of more than 5.0 dBA CNEL over existing conditions. There is no feasible mitigation available to reduce these impacts to less than significant. Lead agencies have limited remedies at their disposal to effectively reduce traffic-related noise. Addressing traffic noise at the receiver rather than the source usually takes the form of noise barriers (i.e., sound walls). While constructing noise barriers along streets would reduce noise, the placement of sound walls between existing residences/businesses and local roadways would not be desirable as it would conflict with the community's aesthetic, design and character and is therefore deemed infeasible. Furthermore, such barriers would likely require property owner approval, which cannot be ensured. While measures such as encouraging ridesharing, carpooling, and alternative modes of transportation could reduce vehicle volumes, such measures can neither be mandated of residents nor have been shown to reduce vehicle trips to the extent needed to reduce vehicle noise levels below established thresholds. Therefore, no feasible mitigation measures exist to reduce the identified significant impact.

The Project would also result in a significant and unavoidable impact related to VMT. Project would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level which would be less than 85 percent of the baseline level would require a reduction of approximately 40 percent from pre-mitigation levels (1–[0.85÷1.45]=0.414). While the following measures would reduce the impact of the Project on VMT, implementation of measures needed to achieve a 40 percent reduction is not considered feasible. As a result, even with implementation of mitigation measures TR-1 through TR-4, the impact of the Feather Ranch Project on VMT is considered to be significant and unavoidable.

4.2.1 Significant and Irreversible Environmental Effects

Section 15126.2(d) of the State CEQA Guidelines requires that an EIR address any significant irreversible changes that would result from a Proposed Project. The State CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations to specific uses; irreversible changes from environmental accidents; and consumption of nonrenewable resources.

Implementation of the Proposed Project would result in an irretrievable commitment of renewable and nonrenewable resources including land, water, energy resources, and construction materials.

Nonrenewable and limited resources that would likely be consumed as part of Project construction and operation would include, but are not limited to, oil, gasoline and diesel fuel, lumber, sand and gravel, steel, and other materials use in the construction of improvements necessary for implementation of the Project. Operation of the Project includes, but is not limited to, possible natural gas (if natural gas will be available at the site), gasoline and diesel fuel, and energy consumption. However, the quantity of resources to be committed is not considered to be significant and are comparable to other developments of this type. No special construction materials or resources are anticipated to be needed as part of the Project.

While the Project will result in the construction of single-family homes, the Project does not change the site to the extent that redevelopment of the site to another use is not possible, such as a new reservoir or highway. As such, the Project would not commit future generations to specific use.

The Project is for the development of single-family residential uses. These types of uses are not known to result in significant environmental accidents or shown to irreversible changes from environmental accidents.

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5.0 ALTERNATIVES TO THE PROPOSED PROJECT

The alternatives analysis consists of the following components: An overview of CEQA requirements for alternatives analysis, descriptions of the alternatives evaluated, a comparison between the anticipated environmental effects of the alternatives and those of the Proposed Project, and identification of an environmentally superior alternative.

5.1 Introduction

The CCR Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe:

> "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states:

> "[b]ecause an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the No Project Alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing the No Project Alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the No Project Alternative is the environmentally superior alternative, CEQA requires

that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining *feasibility* (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part that:

> "[a]mong the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives."

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of potentially feasible alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, in this case the City of Oroville. (See PRC Sections 21081.5, 21081[a] [3].)

5.2 Considerations for Selection of Alternatives

The purpose of the alternatives analysis is to determine if a variation of Proposed Project would reduce or eliminate significant Project impacts while attaining most of the Project's basic objectives.

5.2.1 Project Objectives

One of the key factors in considering project alternatives under CEQA is if they can feasibly attain most of the basic objectives of the project. As discussed previously in Section 2.0, the Proposed Project's objectives are as follows:

- Develop an economically feasible housing plan that is compatible with the surrounding community in a low fire risk zone to provide permanent housing relief for the 50,000 displaced Paradise fire survivors.
- Fulfill the housing needs of the State, City of Oroville, and County of Butte by rezoning unused isolated airport business park land to medium density residential homes to help address the current RHNA. The housing units will be market-rate for-sale units.
- Create a vibrant residential community by providing a like-kind residential project that further adds to the current and future neighborhoods of eastern Oroville. The Project will include lots of 6,000 sf or larger, setback and landscaping buffers.
- Provision a well-connected open space network that includes the addition of a neighborhood park, bicycle paths and pedestrian sidewalks, open space buffers, and a space for recreational activities.

- Incorporate the Building Code requirements for energy efficiencies and water savings.

5.2.2 Significant Effects of the Proposed Project

Impacts associated with implementation of the Proposed Project are evaluated in Chapters 3 and 4 of this EIR. The Proposed Project would have the potential to cause the following significant but mitigable environmental impacts:

Impact BIO-1: Project implementation could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Impact BIO-2: Project implementation could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

Impact BIO-3: Project implementation could cause a substantial adverse effect on state or federally protected wetlands (i.e., including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means.

Impact CUL-1: Project implementation would cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section15064.5.

Impact CUL-2: Project implementation could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section15064.5.

Impact CUL-3: Project implementation could disturb any human remains, including those interred outside of formal cemeteries.

Impact GEO-1: Project implementation could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact PUB-1: Project implementation could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered 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 fire, police, schools, and/or other public facilities.

Impact TCR-1: Project implementation would cause a substantial adverse change in the significance of a Tribal Cultural Resource

As discussed in the technical sections of this EIR, all but five potentially significant impacts would be reduced to a less than significant level with mitigation under the Proposed Project. Three of those impact areas would remain significant and unavoidable and two would remain cumulatively considerable and significant and unavoidable as listed below:

Impact HAZ-1: If the Proposed Project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the Proposed Project could result in a safety hazard or excessive noise for people residing or working in the Project Area.

Impact HAZ-2: Implementation of the Proposed Project, along with any foreseeable development in the Project vicinity, result in cumulative impacts regarding safety hazard or excessive noise for people residing or working in the Project Area.

Impact NOI-1 Project implementation could result in generation of 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.

Impact NOI-4: Implementation of the Proposed Project, in combination with existing, approved, proposed, and reasonably foreseeable development in Butte County, result in a cumulatively considerable noise impact.

Impact TR-2: Project implementation could conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

5.3 Alternatives Considered and Eliminated from Further Evaluation

The State CEQA Guidelines Section 15126.6(a) state that an EIR should identify alternatives that were initially considered by the lead agency but were rejected as infeasible. Section 15126.6(a) of the CEQA Guidelines states:

> "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

CEQA Guidelines Section 15126.6(f)(2)(A) states:

> "[o]nly locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." Further, CEQA Guidelines Section 15126.6(f)(2)(B) states in part, "[i]f the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR..."

In preparing this DEIR, ECORP considered alternatives for review but eliminated them from further analysis because it was determined they did not meet the guidelines set forth in Section 15126.6(a). Alternatives considered but eliminated from further analysis in this DEIR are discussed below.

5.3.1 Alternate Site Alternative

The proposed uses for the Project could be accommodated under the R-1 zoning district in the City. There are a number of parcels within the City boundaries that are vacant and zoned for R-1 able to accommodate this type of development. However, while these parcels are zoned correctly for the type of use proposed for the Proposed Project, these parcels were considered but rejected for a number of reasons including the fact that purchasing and assembling properties in another location that are of the necessary acreage for the Project would be cost prohibitive and infeasible, lack of existing infrastructure, and the Project developer has no control over these parcels at this time. As such, this alternative is eliminated from further evaluation.

5.3.2 Development of Site Consistent with General Plan Land Use Designations Alternative

The Project Site is within the 2030 General Plan land use designation of ABP and zoning district of APB with an AIA-O. For this alternative, the Project Site would be developed consistent with the General Plan land use designation and zoning. According to the 2030 General Plan, Airport Business Park allows for light manufacturing, limited industrial, food processing, wholesale trade and offices. Retail businesses and public services are permitted to a lesser extent and would generally be allowed as an accessory use. Outdoor storage is only permitted in limited amounts if heavily screened. The APB zoning district allows for a variety of uses such as a carnival, circus or fair, caretaker dwelling, food and beverage sales, general retail, office, manufacturing, and solar energy system. Other than a caretakers cottage, residential uses are not allowed in this zoning district. As such, this alternative does not meet the objectives of the Proposed Project and therefore is eliminated from further evaluation.

5.4 Alternatives Considered for Detailed Evaluation

5.4.1 Description of Alternatives

5.4.1.1 Alternative 1: No Project

Under CEQA, an EIR must include a comparative analysis of a No Project Alternative (CEQA Guidelines Section 15126.6(e)). This requirement encourages a Lead Agency to compare the environmental effects of

approving a proposed project with the effects of not approving it. The No Project Alternative generally assumes that the land area affected by Project construction would remain in its existing state, while taking into account what would be reasonably expected to occur in the foreseeable future if the Project were not approved. No other development is proposed in the area or the Project Site. As such, Alternative 1 assumes that the Project Site would remain vacant for the foreseeable future.

5.4.1.2 Alternative 2: Reduced Project

Alternative 2 would require a General Plan amendment and rezoning approval similar to the Proposed Project as the proposed uses under Alternative 2 are not allowed under the current General Plan land use designation and zoning district. As such, Alternative 2 would be a discretionary project pursuant to CEQA and require CEQA environmental review. Alternative 2 would be the development of the Project with the same proposed uses of the Project but on a reduced scale of approximately 75 percent of the Proposed Project's size. This reduction would result in 129 single-family units on the same 44.97-acre parcel. Assuming that the average parcel size of 7,450 sf for the Proposed Project would also be used in Alternative 2, Alternative 2 would result in 7.3 more acres of open space than the Proposed Project[1].

5.4.1.3 Alternative 3: Residential Densities Consistent with the B1 Compatibility Zone

Alternative 3 would allow for residential densities consistent with the Oroville Airport B1 Compatibility Zone of 0.1 dwelling unit per acre (1 unit per 10 acres). Those portions of the Project that are within the B2 Compatibility Zone would be developed at residential densities proposed by the Project. According to information provided by the Butte County Department of Development Services, Planning Division, Airport Land Use Commission (2022), approximately 35.82 acres of the Project Site is within the B1 Compatibility Zone and 9.15 acres of the Site is within the B2 Compatibility Zone. Based on this information, 41 single-family dwellings would be developed in Alternative 3 at the acreage and densities shown in Table 5-1. Three single family homes would have an average lot size of 11.94 acres and 38 homes with an average lot size of 10,488 sf. However, note that these average lot sizes do not account for streets or any open space and are only rough estimates used for this alternative.

Table 5-1. Alternative 3 Residential Development

Compatibility Zone	Acres (approximate)	Dwelling Units	Density
B1	35.82	3	0.08/acre
B2	9.15	38	4.15/acre

5.4.2 Analysis of Alternatives

Because the IS determined that only certain impact analysis areas were to be analyzed in this EIR, each alternative is compared to the Proposed Project using the analysis presented in this DEIR. The Project

[1] Proposed Project = 172 lots x 7,450 sf = 1,281,400 sf (29.4 acres). Alternative 2 = 129 lots x 7,450 sf = 961,050 sf (22.1 acres). 29.4 acres - 22.1 acres = 7.3 acres.

alternatives are evaluated in less detail than those of the Proposed Project, and the impacts are described in terms of difference in outcome compared with implementing the Proposed Project. Table 5-2 at the end of this section provides an at-a-glance comparison of the environmental impacts of each alternative. Table 5-3 compares how the alternatives meet the Project Objectives as compared to the Proposed Project.

5.4.2.1 Alternative 1: No Project

The No Project Alterative assumes that the Project Site would remain as undeveloped land for the foreseeable future. No construction on the site would occur.

Air Quality

The analysis provided in Section 3.1 determined that the Proposed Project would not result in substantial impacts to air quality; therefore no mitigation is necessary.

Alternative 1 would not exceed any air quality thresholds as the Project Site would remain in its existing condition and therefore no impact to air quality would occur. As such, the impacts to air quality under this alternative are less than the Proposed Project.

Biological Resources

As discussed in Section 3.3, the Proposed Project would result in potential impacts to special-status species, sensitive natural communities, and wetlands. However, Mitigation Measures BIO-1 through BIO-9 would reduce these potential impacts to a less than significant level.

As no new construction or other uses are proposed with Alternative 1, this alternative would not result in impacts to biological resources beyond those currently existing. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to biological resources as the impacts to these resources would be greater with the Proposed Project than with Alternative 1.

Cultural Resources

As discussed in Section 3.4, the Proposed Project would result in potential impacts to unknown/undiscovered historical, and archaeological cultural resources. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

As no new construction is proposed with Alternative 1, this alternative would not result in impacts to cultural resources. As such, the impacts to cultural resources under this alternative are less than the Proposed Project and Alternative 1 is considered superior to the Proposed Project with regard to impacts to cultural resources.

Energy

As discussed in Section 3.5, it was determined that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

However, as Alternative 1 would not result in any change to existing conditions, it would not increase energy use beyond what is currently being used. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to energy.

Geology, Soils, and Paleontology

The Proposed Project would result in potential impacts to unknown paleontological resources. However, as defined in the Section 3.6, Mitigation Measure GEO-1 would reduce this potential impact to a less than significant level.

Because no new infrastructure or other ground disturbing construction is proposed with Alternative 1, this alternative would not result in the potential for paleontological impacts. As such, the potential impacts to paleontological resources under this alternative are less than the Proposed Project and Alternative 1 Alternative 1 is considered superior to the Proposed Project with regard to impacts to paleontological resources.

Greenhouse Gases

Project construction and operations would result in the generation of 620 metric tons of CO_2e annually during construction and 3,792 metric tons of CO_2e during operation annually, However, as discussed in Section 3.7, the Proposed Project's GHG emissions were determined to be less than significant because, while the Project results in GHG emissions the Project, expected growth in population and housing as a result of the Proposed Project would not surpass BCAG's growth projections and therefore would not result in a conflict with the 2020 RTP/SCS.

Alternative 1 would have no change in existing conditions and therefore no increase of GHG emissions would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts from GHG and climate change.

Hazards and Hazardous Materials

The Proposed Project would result in a significant and unavoidable and cumulatively considerable airport safety hazard for people residing within the Proposed Project as the Project does not meet the density restrictions for the B1 and B2 Compatibility Zones. The only mitigation possible would be to either eliminate the use of the airport or move the Project to a location outside of the B1 and B2 Compatibility Zones. Neither of these mitigations are feasible. As such, there is no feasible mitigation possible to mitigate the potential airport safety impacts.

Alternative 1 would have no change in existing conditions; therefore no airport safety hazards would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to airport safety hazard impacts.

Land Use and Planning

The Proposed Project would not have an impact to land use and planning because it can be shown that no General Plan land use designations or policies were adopted for the purpose of avoiding or mitigating

an environmental effect. Therefore, the Proposed Project would have a less than significant impact in this area.

Alternative 1 would have no change in existing conditions; therefore no impacts to land use or planning would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to land use and planning impacts.

Noise

The Proposed Project would result in a significant and unavoidable and cumulatively considerable impacts as a result of traffic noise related to the Project. As discussed in Impacts NOI-1 and NOI-4, there is no feasible mitigation available to reduce these impacts to less than significant.

Alternative 1 would have no change in existing conditions; therefore no increase of noise levels would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts from noise.

Population and Housing

The Proposed Project is inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, while this population growth has not been considered in the City's General Plan, the estimated population from the Project represents only a 2.3 percent increase in the City's 2022 population and a 2.2 percent increase in housing units over the existing 2022 housing units in the city. Additionally, the 172 units represent a 1.8 percent increase over the projected 2030 number of housing units provided in the General Plan Draft EIR. The Oroville ALUCP does not provide population growth estimates and as such, the Proposed Project is not inconsistent with growth scenarios for this plan. Based on these factors, the Project would not result in a substantial unplanned growth. Therefore, the Proposed Project would have a less than significant impact in this area.

Alternative 1 would have no change in existing conditions; therefore no impacts to population and housing would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to population and housing impacts.

Public Services

The City determined that future fire and police department facilities will be needed for those areas west of Highway 70 and formed two community facilities districts to provide funding for future facilities. Because the location of the Project Site is west of Highway 70, annexation into these community facilities districts is necessary. Mitigation Measure PUB-1 requires this annexation and implementation would result in a less than significant impact to public services.

Alternative 1 would have no change in existing conditions; therefore no impacts to public services would occur. As such, Alternative 1 is considered superior to the Proposed Project in this area.

Transportation and Circulation

Development of the Project Site would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level that would be less than 85 percent of the

baseline level would require a reduction of approximately 40 percent from pre-mitigation levels (1-[0.85÷1.45]=0.414). While Mitigation Measures TR-1, TR-2, and TR-3 would reduce the impact of the Project on VMT, implementation of mitigations needed to achieve a 40 percent reduction is not considered feasible. As a result, even with implementation of the mitigation measures, the impact of the Feather Ranch Project on VMT is considered to be significant and unavoidable.

Alternative 1 would have no change in existing conditions; therefore no impacts to transportation and circulation would occur. As such, Alternative 1 is considered superior to the Proposed Project in this area.

Tribal Cultural Resources

As discussed in Section 3.14, the Proposed Project would result in potential impacts to unknown or undiscovered TCRs. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

As no new construction is proposed with Alternative 1, this alternative would not result in impacts to TCRs. As such, the impacts to TCRsunder this alternative are less than the Proposed Project and Alternative 1 is considered superior to the Proposed Project with regard to impacts to TCRs.

Utilities and Service Systems

TWSD has determined that sewer collection service can be provided by TWSD for the Project. While it appears that SC-OR has adequate capacity at the WTF to serve the Project, because SC-OR requires a Capacity Impact Study as a part of a service agreement for a new project, this WTF capacity will be assured. These conditions as well as 2030 General Plan policies P7.3, P7.4, and P7.5 will ensure that the wastewater treatment capacity is available. As such, the Project would have a less than significant impact in this area.

Alternative 1 would have no change in existing conditions; therefore no impacts to wastewater or other utility services would occur. As such, Alternative 1 is considered superior to the Proposed Project in this area.

5.4.2.2 Alternative 2: Reduced Project

Alternative 2 would be the development of the Project with the same proposed uses of the Project but on a reduced scale of approximately 75 percent of the Proposed Project's size. This reduction would result in 129 single-family units on the same 44.97-acre parcel.

Air Quality

The analysis provided in Section 3.1 determined that the Proposed Project would not result in substantial impacts to air quality; therefore no mitigation is necessary.

Alternative 2 would also result in an increase in air quality emissions in the area but to a lesser degree than the Proposed Project. Because Alternative 2 would be approximately 75 percent the size of the Proposed Project and the Proposed Project did not result in substantial impacts to air quality, Alternative 2 would also not result in impacts to air quality. However, because Alternative 2 is for the

development of 129 single-family homes compared to the Project's 172 homes, construction and operational air quality emissions would be less than those for the Project. Therefore, the impacts to air quality under this alternative are less than the Proposed Project.

Biological Resources

As discussed in Section 3.3, the Proposed Project would result in potential impacts to special-status species, sensitive natural communities, and wetlands. However, Mitigation Measures BIO-1 through BIO-9 would reduce these potential impacts to a less than significant level.

While Alternative 2 would result in less construction and more open space than the Proposed Project, because Alternative 2 is on the same site as the Proposed Project, Alternative 2 would have similar potential impacts to special-status species, sensitive natural communities, and wetlands. As such, this Alternative would require mitigation to protect these resources. This mitigation would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Alternative 2 is considered equivalent to the Proposed Project with regard to potential impacts to biological resources.

Cultural Resources

As discussed in Section 3.4, the Proposed Project would result in potential impacts to unknown/undiscovered historical, and archaeological cultural resources. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

Alternative 2 would include the construction of similar uses to the Project but at a lesser density. However, Alternative 2 would be on the same site and therefore have similar potential impacts to unknown or undiscovered historical, archaeological cultural resources to the Project. While Alternative 2 may result in less ground-disturbing construction than the Project, because Alternative 2 is on the same site as the Proposed Project, Alternative 2 would have similar potential impacts to cultural resources. As such, Alternative 2 would require mitigation to protect these resources. This mitigation would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Alternative 2 is considered similar to the Proposed Project with regard to potential impacts to cultural resources.

Energy

As discussed in Section 3.5, it was determined that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

With fewer single-family homes being developed for Alternative 2, Alternative 2 would use less energy during construction and operation than the Proposed Project. Although the Project would have a less than significant impact on energy, Alternative 2 would have the same level of impact but use less energy than the Project. Therefore, this Alternative would be considered superior to the Project with regard to energy use.

Geology, Soils, and Paleontology

The Proposed Project would result in potential impacts to unknown paleontological resources. However, as defined in the Section 3.6, Mitigation Measure GEO-1 would reduce this potential impact to a less than significant level.

Alternative 2 would also result in the development of the site and therefore have similar potential impacts to unknown or undiscovered paleontological resources to the Project. As such, Alternative 2 would require mitigation to protect these resources. This mitigation would also reduce impacts to these resources to a less than significant impact similar to the Proposed Project. Alternative 2 is considered equivalent to the Proposed Project with regard to potential impacts to paleontological resources.

Greenhouse Gases

Project construction and operations would result in the generation of 620 metric tons of CO_2e annually during construction and 3,792 metric tons of CO_2e during operation annually. However, as discussed in Section 3.7, the Proposed Project's GHG emissions were determined to be less than significant because, while the Project does result in GHG emissions the Project, expected growth in population and housing as a result of the Proposed Project would not surpass BCAG's growth projections and therefore would not result in a conflict with the 2020 RTP/SCS.

While Alternative 2 would be a less intense development, Alternative 2 would have a similar result with respect to GHG emissions and their impact to the Scoping Plan. However, because Alternative 2 would be a smaller project than the Proposed Project, the GHG emissions would be less and, environmentally speaking, Alternative 2 would be superior to the Proposed Project with regard to GHG emissions.

Hazards and Hazardous Materials

The Proposed Project would result in a significant and unavoidable and cumulatively considerable airport safety hazard for people residing within the Proposed Project as the Project does not meet the density restrictions for the B1 and B2 Compatibility Zones. The only mitigation possible would be to either eliminate the use of the airport or move the Project to a location outside of the B1 and B2 Compatibility Zones. Neither of these mitigations are feasible. As such, there is no feasible mitigation possible to mitigate the potential airport safety impacts.

Alternative 2 would result in the construction of 129 single-family homes, which is 43 homes fewer than the Project. Alternative 2 overall density would be 2.87 units per acre which, like the Project, exceeds the B1 and B2 Compatibility Zone density requirements. As such, Alternative 2 would also result in a significant and unavoidable airport safety impact, as no mitigation is feasible, and be similar to the Project.

Land Use and Planning

The Proposed Project would not have an impact on land use and planning because it can be shown that no General Plan land use designations or policies were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Proposed Project would have a less than significant impacts in this area.

Alternative 2 would also require a General Plan Amendment and rezoning. However, as with the Project, these changes would not result in a land use and planning impact because it can be shown that no General Plan land use designations or policies were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Alternative 2 would have a less than significant impact in this area and be similar to the Proposed Project.

Noise

The Proposed Project would result in a significant and unavoidable and cumulatively considerable as a result of traffic noise related to the Project. As discussed in Impacts NOI-1 and NOI-4, there is no feasible mitigation available to reduce these impacts to less than significant.

Alternative 2 would reduce the amount of project-related traffic by approximately 25 percent. This would also reduce the amount of traffic noise. However, because the existing area is relatively quiet, it is fairly easy to increase noise related to traffic beyond the General Plan transportation noise level thresholds indicated in Noise Element Policy P1.6. As shown in Table 3.9-9, the Project-related traffic noise increases traffic noise in the area by 10.3 dBA on 20th street between Biggs and Feather avenues, which exceeds the General Plan transportation noise threshold. Alternative 2 is a smaller project; however, a reduction of 25 percent in traffic would not reduce traffic-related noise to less than the 5 dB increase threshold. As such, similar to the Project, while Alternative 2 would have less traffic noise, Alternative 2 would still exceed the General Plan noise threshold of 5 dbs. As no mitigation is feasible, Alternative 2 traffic noise impact would also be significant and unavoidable.

Population and Housing

The Proposed Project is inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, while this population growth has not been considered in the City's General Plan, the estimated population from the Project represents only a 2.3 percent increase in the City's 2022 population and a 2.2 percent increase in housing units over the existing 2022 housing units in the City. Additionally, the 172 units represent a 1.8 percent increase over the projected 2030 number of housing units provided in the General Plan Draft EIR. The Oroville ALUCP does not provide population growth estimates and as such, the Proposed Project is not inconsistent with growth scenarios for this plan. Based on these factors, the Project would not result in a substantial unplanned growth. Therefore, the Proposed Project would have a less than significant impact in this area.

Alternative 2 would also be inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, similar to the Project, this growth would not be substantial to the point of causing a significant impact. As such, Alternative 2 is considered similar to the Proposed Project with regard to population and housing impacts.

Public Services

The City determined that future fire and police department facilities will be needed for those areas west of Highway 70 and formed two community facilities districts to provide funding for future facilities. Because the location of the Project Site is west of Highway 70, annexation into these community facilities districts

is necessary. Mitigation Measure PUB-1 requires this annexation. and implementation would result in a less than significant impact to public services.

Because Alternative 2 is in the same location as the Project, Alternative 2 would also require mitigation for annexation into the two community facilities districts. As such, Alternative 2 is considered similar to the Proposed Project in this area.

Transportation and Circulation

Development of the Project Site would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level that would be less than 85 percent of the baseline level would require a reduction of approximately 40 percent from pre-mitigation levels (1-[0.85÷1.45]=0.414). While Mitigation Measures TR-1, TR-2, and TR-3 would reduce the impact of the Project on VMT, implementation of mitigations needed to achieve a 40 percent reduction is not considered feasible. As a result, even with implementation of the mitigation measures, the impact of the Feather Ranch Project on VMT is considered to be significant and unavoidable.

VMT is based on location. Figure 4-A of the *BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices* document shows the Project Site is located in an area where home-based VMT per resident would be greater than a level 15 below the baseline condition. That is, the method presented in this document indicates residential development in the Project Site would result in the generation of VMT that is not below 85 percent of baseline conditions. On a per-resident level, data from the travel demand model shows residential land use development in TAZ 911 would generate 26.7 home-base VMT per resident, while the average for the City of Oroville would be 19.1 home-based VMT per resident. Therefore, the Project Site would be expected to generate VMT at 140 percent of the baseline City of Oroville average (26.7÷19.1=1.40). Because Alternative 2 would be located on the same site as the Project, Alternative 2 would have the same impact on VMT. Therefore, Alternative 2 would also result in a significant and unavoidable impact. As such, Alternative 2 is considered similar to the Proposed Project in this area.

Tribal Cultural Resources

As discussed in Section 3.14, the Proposed Project would result in potential impacts to unknown or undiscovered TCRs. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

Alternative 2 would include the construction of similar uses to the Project but at a lesser density. However, Alternative 2 would be on the same site and therefore have similar potential impacts to unknown or undiscovered TCRsto the Project. While Alternative 2 may result in less ground disturbing construction than the Project, because Alternative 2 is on the same site as the Proposed Project, Alternative 2 would have similar potential impacts to TCRs. As such, Alternative 2 would require mitigation to protect these resources. This mitigation would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Alternative 2 is considered similar to the Proposed Project with regard to potential impacts to TCRs.

Utilities and Service Systems

TWSD has determined that sewer collection service can be provided by TWSD for the Project. While it appears that SC-OR has adequate capacity at the WTF to serve the Project, because SC-OR requires a Capacity Impact Study as a part of a service agreement for a new project, this WTF capacity will be assured. These conditions as well as 2030 General Plan policies P7.3, P7.4, and P7.5 will ensure that the wastewater treatment capacity is available. As such, the Project would have a less than significant impact in this area.

Alternative 2 would also be served by TWSD and SC-OR for wastewater collection and treatment. Alternative 2 would also be required by SC-OR to complete a Capacity Impact Study for Project development. As such, Alternative 2 would result in a less than significant impact and is considered similar to the Proposed Project in this area.

5.4.2.3 Alternative 3: Residential Densities Consistent with the B1 Compatibility Zone

Alternative 3 would allow for residential densities consistent with the Oroville Airport B1 Compatibility Zone of 0.1 dwelling unit per acre (1 unit per 10 acres). Those portions of the Project that are within the B2 Compatibility Zone would be developed at residential densities proposed by the Project. Based on this, 41 single-family dwellings would be developed in Alternative 3. Three single-family homes with an average lot size of 11.94 acres and 38 homes with an average lot size of 10,488 sf. However, note that these average lot sizes do not account for streets or any open space and are just rough estimates used for this alternative.

Air Quality

The analysis provided in Section 3.1 determined that the Proposed Project would not result in substantial impacts to air quality: therefore no mitigation is necessary.

Alternative 3 would also result in an increase in air quality emissions in the area but to a much lesser degree than the Proposed Project. Because Alternative 3 would result in the development of 41 single-family homes. The Proposed Project, with its 172 homes, did not result in substantial impacts to air quality, Alternative 2 would also not result in impacts to air quality. However, because Alternative 3 is for the development of 41 single-family homes compared to the Project's 172 homes, construction and operational air quality emissions would be less than those of the Proposed Project. Therefore, the impacts to air quality under this alternative are less than the Proposed Project.

Biological Resources

As discussed in Section 3.3, the Proposed Project would result in potential impacts to special-status species, sensitive natural communities, and wetlands. However, Mitigation Measures BIO-1 through BIO-9 would reduce these potential impacts to a less than significant level.

While Alternative 3 would result in less construction and more open space than the Proposed Project, because Alternative 3 is on the same site as the Proposed Project, Alternative 3 would have potential impacts to special-status species, sensitive natural communities, and wetlands. However, because much of

the 44.97-acre site for Alternative 3 would only be occupied by three homes (35.82 acres), the ability to not impact wetlands and areas of sensitive natural communities would be much less with Alternative 3 than the Proposed Project. In any case, this Alternative would also require mitigation to protect biological resources. These mitigations would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Because Alternative 3 would have substantially more open space than the Project, Alternative 3 is considered superior to the Proposed Project with regard to potential impacts to biological resources.

Cultural Resources

As discussed in Section 3.4, the Proposed Project would result in potential impacts to unknown or undiscovered historical, and archaeological cultural resources. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

Alternative 3 would include the construction of similar uses to the Project but at a much lower density. However, Alternative 3 would be on the same site and therefore have similar potential impacts to unknown/undiscovered historical, archaeological cultural resources to the Project. While Alternative 3 may result in less ground-disturbing construction than the Project, because Alternative 3 is on the same site as the Proposed Project, Alternative 3 would have similar potential impacts to cultural resources. As such, Alternative 3 would require mitigation to protect these resources. This mitigation would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Alternative 3 is considered similar to the Proposed Project with regard to potential impacts to cultural resources.

Energy

As discussed in Section 3.5, it was determined that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

With fewer single-family homes being developed for Alternative 3, Alternative 3 would use less energy during construction and operation than the Proposed Project. Although the Project would have a less than significant impact on energy, Alternative 3 would have the same level of impact but use less energy than the Project. Therefore, Alternative 3 would be considered superior to the Project with regard to energy use.

Geology, Soils, and Paleontology

The Proposed Project would result in potential impacts to unknown paleontological resources. However, as defined in the Section 3.6, Mitigation Measure GEO-1 would reduce this potential impact to a less than significant level.

Alternative 3 would also result in the development of the site and therefore have similar potential impacts to unknown or undiscovered paleontological resources to the Project. As such, Alternative 3 would require mitigation to protect these resources. This mitigation would also reduce impacts to these resources to a less than significant impact similar to the Proposed Project. Alternative 3 is considered equivalent to the Proposed Project with regard to potential impacts to paleontological resources.

Greenhouse Gases

Project construction and operations would result in the generation of GHG emissions. However, as discussed in Section 3.7, the Proposed Project's GHG emissions were determined to be less than significant because, while the Project results in GHG emissions the Project, expected growth in population and housing as a result of the Proposed Project would not surpass BCAG's growth projections and therefore would not result in a conflict with the 2020 RTP/SCS.

While Alternative 3 would be less development, Alternative 3 would have a similar result with respect to GHG emissions and their impact to the Scoping Plan. However, because Alternative 3 would be a smaller project than the Proposed Project, the GHG emissions would be less and, environmentally speaking, Alternative 3 would be superior to the Proposed Project with regard to GHG emissions.

Hazards and Hazardous Materials

The Proposed Project would result in a significant and unavoidable and cumulatively considerable airport safety hazard for people residing within the Proposed Project as the Project does not meet the density restrictions for the B1 and B2 Compatibility Zones. The only mitigation possible would be to either eliminate the use of the airport or move the Project to a location outside of the B1 and B2 Compatibility Zones. Neither of these mitigations are feasible. As such, there is no feasible mitigation possible to mitigate the potential airport safety impacts.

Alternative 3 would result in the construction of 41 single-family homes. Alternative 3 overall density would meet the densities required for the B1 Compatibility Zone but would exceed B2 Compatibility Zones density requirements. As such, Alternative 3 would also result in a significant and unavoidable airport safety impact in the B2 Compatibility Zone area. However, because Alternative 3 would meet the B1 Compatibility Zone density, Alternative 3 would be superior to the Project with regard to airport safety hazards.

Land Use and Planning

The Proposed Project would not have an impact to land use and planning because it can be shown that no General Plan land use designations or policies were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Proposed Project would have a less than significant impacts in this area.

Alternative 3 would also require a General Plan Amendment and rezoning. However, as with the Project, these changes would not result in a land use and planning impact because it can be shown that no General Plan land use designations or policies were adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Alternative 3 would have a less than significant impact in this area and be similar to the Proposed Project.

Noise

The Proposed Project would result in a significant and unavoidable and cumulatively considerable as a result of traffic noise related to the Project. As discussed in Impacts NOI-1 and NOI-4, there is no feasible mitigation available to reduce these impacts to less than significant.

Alternative 3 would reduce the amount of Project-related traffic by a substantial amount when compared to the Proposed Project since only 41 single-family homes would be developed. This would also substantially reduce the amount of traffic noise. Because the existing area is relatively quiet, it is fairly easy to increase traffic-related noise to beyond the General Plan transportation noise level thresholds indicated in Noise Element Policy P1.6. As shown in Table 3.9-9, the Project-related traffic noise increases traffic noise in the area by 10.3 dBA on 20th street between Biggs Avenue and Feather Avenue, which exceeds the General Plan transportation noise threshold. Alternative 3 is a much smaller development than the Proposed Project, approximately 24 percent in the number of dwelling units. As such, Alternative 3 would have much less traffic noise and would most likely not exceed the General Plan's noise levels. Therefore, the Alternative 3 would have a less than significant impact in this area and be superior to the Proposed Project.

Population and Housing

The Proposed Project is inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, while this population growth has not been considered in the City's General Plan, the estimated population from the Project represents only a 2.3 percent increase in the City's 2022 population and a 2.2 percent increase in housing units over the existing 2022 housing units in the City. Additionally, the 172 units represent a 1.8 percent increase over the projected 2030 number of housing units provided in the General Plan Draft EIR. The Oroville ALUCP does not provide population growth estimates and as such, the Proposed Project is not inconsistent with growth scenarios for this plan. Based on these factors, the Project would not result in a substantial unplanned growth. Therefore, the Proposed Project would have a less than significant impact in this area.

Alternative 3 would also be inconsistent with the existing land use plans and therefore would result in unplanned population growth. However, similar to the Project, this growth would not be substantial to the point of causing a significant impact. As such, Alternative 3 is considered similar to the Proposed Project with regard to population and housing impacts.

Public Services

The City determined that future fire and police department facilities will be needed for those area west of Highway 70 and formed two community facilities districts to provide funding for future facilities. Because Project Site is located west of Highway 70, annexation into these community facilities districts is necessary. Mitigation Measure PUB-1 requires this annexation and implementation would result in a less than significant impact to public services.

Because Alternative 3 is in the same location as the Project, Alternative 3 would also require mitigation for annexation into the two community facilities districts. As such, Alternative 3 is considered similar to the Proposed Project in this area.

Transportation and Circulation

Development of the Project Site would be expected to generate VMT at 140 to 145 percent of the baseline City of Oroville average. Mitigating VMT to a level which would be less than 85 percent of the baseline level would require a reduction of approximately 40 percent from pre-mitigation levels

(1-[0.85÷1.45]=0.414). While Mitigation Measures TR-1, TR-2, and TR-3 would reduce the impact of the Project on VMT, implementation of mitigation needed to achieve a 40 percent reduction is not considered feasible. As a result, even with implementation of the mitigation measures, the impact of the Feather Ranch Project on VMT is considered to be significant and unavoidable.

VMT is based on location. Figure 4-A of the *BCAG SB 743 Implementation – VMT Impact Significance Threshold – Assessing Lead Agency Choices* document shows the Project Site is located in an area where home-based VMT per resident would be greater than a level 15 below the baseline condition. That is, the method presented in this document indicates residential development in the Project Site would result in the generation of VMT that is not below 85 percent of baseline conditions. On a per-resident level, data from the travel demand model shows residential land use development in TAZ 911 would generate 26.7 home-base VMT per resident, while the average for the City of Oroville would be 19.1 home-based VMT per resident. Therefore, the Project Site would be expected to generate VMT at 140 percent of the baseline City of Oroville average (26.7÷19.1=1.40). Because Alternative 3 would be located on the same site as the Project, Alternative 3 would have the same impact on VMT. Therefore, Alternative 3 would also result in a significant and unavailable impact. As such, Alternative 3 is considered similar to the Proposed Project in this area.

Tribal Cultural Resources

As discussed in Section 3.14, the Proposed Project would result in potential impacts to unknown or undiscovered TCRs. However, Mitigation Measure CUL-1 would reduce these potential impacts to a less than significant level.

Alternative 3 would include the construction of similar uses to the Project but at a lower density. However, Alternative 3 would be on the same site and therefore have similar potential impacts to unknown or undiscovered TCRs to the Project. While Alternative 3 may result in less ground-disturbing construction than the Project, because Alternative 3 is on the same site as the Proposed Project, Alternative 3 would have similar potential impacts to TCRs. As such, Alternative 3 would require mitigation to protect these resources. This mitigation would also reduce impacts to these species to a less than significant impact similar to the Proposed Project. Alternative 3 is considered similar to the Proposed Project with regard to potential impacts to TCRs.

Utilities and Service Systems

The TWSD has determined that sewer collection service can be provided by TWSD for the Project. While it appears that SC-OR has adequate capacity at the WTF to serve the Project, because SC-OR requires a Capacity Impact Study as a part of a service agreement for a new project, this WTF capacity will be assured. These conditions as well as 2030 General Plan policies P7.3, P7.4, and P7.5 will ensure that the wastewater treatment capacity is available. As such, the Project would have a less than significant impact in this area.

Alternative 3 would also be served by TWSD and SC-OR for wastewater collection and treatment. Alternative 3 would also be required by SC-OR to complete a Capacity Impact Study for Project

development. As such, Alternative 3 would result in a less than significant impact and is considered similar to the Proposed Project in this area.

5.5 Environmentally Superior Alternative

An EIR must describe a reasonable range of alternatives to a project that would feasibly attain the basic project objectives while avoiding or reducing one or more of the project's significant effects (CEQA Guidelines Section 15126.6(a)).

Table 5.0-2 summarizes the potential impacts of the alternatives evaluated in this section, as compared with the potential impacts of the Proposed Project. Table 5-3 identifies how well an alternative meets the Project objectives. As shown in Table 5-2, Alternative 1 No Project, would the environmentally superior alternative as it would result in no impact to the environment. However, CEQA requires that when the environmentally superior alternative is the No Project Alternative, another alternative be identified as the environmentally superior alternative [CEQA Guidelines Section 15126.6(e)(2)].

An EIR must describe a reasonable range of alternatives to a project that would feasibly attain the basic project objectives while avoiding or reducing one or more of the project's significant effects (CEQA Guidelines Section 15126.6(a)). The Proposed Project has five objectives. Table 5-2 illustrates a comparison of the alternatives to the basic Project objectives. As shown in this table, Alternative 1 does not meet any of the Project objectives, and Alternatives 2 and 3 both meet four of the five Project objectives.

Alternative 3 would reduce one of the three Project impacts whereas Alternative 2 would not reduce any of the Project's significant and unavoidable impacts. Based on the evaluation contained in Section 5.4 and Tables 5-2 and 5-3, Alternative 3 would be the environmentally superior alternative, as it would result in fewer impacts to one resource category when compared to the Proposed Project and still meet the majority of Project objectives.

Table 5-2. Comparison of the Environmental Impacts of the Alternatives in Relation to the Proposed Project

Environmental Topic	Level of Environmental Impact (Impact Comparison to Proposed Project)			
	Proposed Project	**Alt 1 No Project**	**Alt 2 Reduced Project**	**Alt 3 B1 Compatible**
Air Quality	LTS	NI (Less)	LTS (Less)	LTS (Less)
Biological Resources	LTSM	NI (Less)	LTSM (Similar)	LTSM (Less)
Cultural Resources	LTSM	NI (Less)	LTSM (Similar)	LTSM (Similar)
Energy	LTS	NI (Less)	LTS (Less)	LTS (Less)
Geology, Soils, and Paleontology	LTS	NI (Less)	LTS (Similar)	LTS (Similar)
Greenhouse Gas	LTS	NI (Less)	LTS (Less)	LTS (Less)
Hazards and Hazardous Materials	SU	NI (Less)	SU (Similar)	SU (Less)
Land Use and Planning	LTS	NI (Less)	LTS (Similar)	LTS (Less)
Noise	SU	NI (Less)	SU (Similar)	LTS (Less)
Population and Housing	LTS	NI (Less)	LTS (Similar)	LTS (Less)
Public Services	LTSM	NI (Less)	LTSM (Similar)	LTS (Similar)
Transportation and Circulation	SU, CC	NI (Less)	SU, CC (Similar)	SU, CC (Similar)
Tribal Cultural Resources	LTSM	NI (Less)	LTSM (Similar)	LTSM (Similar)
Utilities and Service Systems	LTS	NI (Less)	LTS (Similar)	LTS (Similar)

Notes: NI = No Impact, LTS = Less than Significant, LTSM = Less than Significant with Mitigation, SU = Significant and Unavoidable, CC = Cumulatively Considerable
Less = Alternative is environmentally superior, impacts are less than those of the Proposed Project,
Greater = Alternative is environmentally inferior, impacts are greater than those of the Proposed Project,
Similar = Alternative is environmentally the same, impacts similar to those of the Proposed Project, or no better or worse

Table 5-3. Comparison of Alternatives by Project Objectives

Project Objective	Alternatives		
	1	2	3
Develop an economically feasible housing plan that is compatible with the surrounding community in a low fire risk zone to provide permanent housing relief for the 50,000 displaced Paradise fire survivors.	-	-	-
Fulfill the housing needs of the State, City of Oroville, and County of Butte by rezoning un-used isolated airport business park land to medium density residential homes to help address the current Regional Housing Needs Assessment (RHNA). The housing units will be market-rate for-sale units.	-	+	+
Create a vibrant residential community by providing a like-kind residential project that further adds to the current and future neighborhoods of eastern Oroville. The project will include lots of 6,000 square feet or larger, setback and landscaping buffers.	-	+	+
Provision a well-connected open space network that includes the addition of a neighborhood park, bicycle paths and pedestrian sidewalks, open space buffers, and a space for recreational activities.	-	+	+
Incorporate the Building Code requirements for energy efficiencies and water savings.	-	+	+
Total Project Objectives Met:	0	4	4

Notes: - = Does not meet objective, + = Meets objective

6.0 REFERENCES

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