SCH # 2019089041

VALLEY'S EDGE SPECIFIC PLAN DRAFT EIR

CITY OF CHICO

OCTOBER 2021

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Valley's Edge Specific Plan
Draft Environmental Impact Report
SCH No. 2019089041

Prepared for:

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OCTOBER 2021

Printed on 30% post-consumer recycled material.

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AAQS	ambient air quality standards
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ACOE	Army Corps of Engineers
ADA	Americans with Disabilities
ADT	average daily traffic
ADU	Accessory Dwelling Units
ADWF	average dry weather flows
AF	acre-feet
AFY	acre-feet per year
AGR	agricultural supply
AMSL	above mean sea level
ANSI	American National Standards Institute
APN	Assessor's Parcel Numbers
ARHPB	Architectural Review and Historic Preservation Board
ASTM	American Standards for Testing and Measurement
ATCM	Airborne Toxic Control Measures
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BCE	Butte Choice Energy
BCFD	Butte County Fire Department
BMP	Best Management Practice
BRCP	Butte Regional Conservation Plan
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California Environmental Protection Agency
CALFIRE	California Department of Forestry and Fire Protection
CalOES	California Office of Emergency Services
CalOSHA	California Division of Occupational Safety and Health
CALPADS	California Longitudinal Pupil Achievement Data System
CAMUTCD	California Manual on Uniform Traffic Control Devices
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CAP	climate action plan
CARB	California Air Resources Board
CARD	Chico Area Recreation and Park District
CBC	California Building Code
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CDS	Continuous Deflective Separation
CEC	California Energy Commission
CEQA	California Environmental Quality Act

Acronym/Abbreviation	Definition
CESA	California Endangered Species Act
CFC	California Fire Code
CFD	Chico Fire Department
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHABA	Committee of Hearing, Bio Acoustics, and Bio Mechanics
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHTS	California Household Travel Survey
CIPP	Chico Industrial Pretreatment Program
CIWMB	California Integrated Waste Management Board
CMC	Chico Municipal Code
CMU	Commercial Mixed-Use
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO2	California's carbon dioxide
COLD	freshwater habitat cold
CPD	Chico Police Department
CPTED	Crime Prevention Through Environmental Design
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CRRC	Cool Roof Rating Council
CUSD	Chico Unified School District
CVFPB	Central Valley Flood Protection Board
CVRWQCB	City of Chico, the Central Valley RWQCB
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
DBH	diameter at breast height
DGS	Department of General Services
DPM	Diesel particulate matter
DRC	Design Review Committee
DSA	Division of the State Architect
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EC	electrical conductivity
EDR	Environmental Data Resources
EDU	equivalent dwelling unit
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtors Model
EMS	emergency medical service
EO	Executive Order
EOP	Emergency Operations Plan

Acronym/Abbreviation	Definition
EO	executive order
EPA	Environmental Protection Agency
ESA	environmentally sensitive area
EV	electric vehicle
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	fire hazard severity zones
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FRAP	Fire and Resources Assessment Program
GHG	greenhouse gas
GIS	Geographic Information Systems
GSA	Groundwater Sustainability Agency
GWP	global warming potential
HAP	hazardous air pollutant
HDM	Highway Design Manual
HFC	hydrofluorocarbon
HHD	heavy-duty
HOA	Homeowners Association
HPD	Historic Preservation District
HSWA	Hazardous and Solid Waste Act
HVAC	heating, ventilation and air conditioning
HWCL	Hazardous Waste Control Law
IND	industrial services supply
IPaC	Information, Planning, and Conservation
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
JPA	Joint Powers Agreement
LAFCO	Local Government Formation Commission
LCFS	Low Carbon Fuel Standard
LDL	Larson Davis Laboratories
LDR	Low Density Residential
LED	light emitting diodes
LHMP	Local Hazards Mitigation Plan
LID	Low Impact Development
LL	Liquid limit
LOS	level of service
LRA	Local Responsibility Area
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MDR	Medium Density Residential
MGD	million gallons per day
MHDR	Medium-High Density Residential
MIGR	migration of aquatic organisms
MMRP	Mitigation Monitoring and Reporting Program

Acronym/Abbreviation	Definition
MMT	million metric tons
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSR	Municipal Service Review
MT	metric ton
MUN	municipal and domestic supply
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NC	Neighborhood Commercial
NCSS	National Cooperative Soil Survey
NEIC	Northeast Information Center
NESHAP	National Emission Standards for Hazardous Air Pollutants
NEV	Neighborhood Electric Vehicle
NGDA	National Geospatial Data Asset
NGTOC	National Geospatial Technical Operations Center
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPMS	National Pipeline Mapping System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NVWM	North Valley Waste Management
O_3	ozone
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OWMMP	Oak Woodland Mitigation and Management Plan
OWS	Oil/Water Grit Separators
PA-19	Planning Area 19
PCB	Polychlorinated Biphenyl
PEA	Preliminary Environmental Assessment
PFC	perfluorocarbon
PFS	Public Facilities and Services
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PI	Plasticity index
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter

Acronym/Abbreviation	Definition
POS	Primary Open Space
POST	Peace Officer Standards and Training
POW	power
PPH	persons per household
PPV	peak particle velocity
PRC	Public Resources Code
PRMP	Parks and Recreation Master Plan
PRO	industrial process supply
PSHA	probabilistic seismic hazard assessment
PWWF	peak wet weather flow
RCNM	Roadway Construction Noise Model
RCO	Resource Constraint Overlay
RCRA	Recovery Act of 1976
REC-1	water contact recreation
RFS	Renewable Fuel Standard
RFS1	original Renewable Fuel Standard program
RMS	root-mean-square
ROG	reactive organic gases
R-OS	Regional Open Space
ROW	right-of-way
RPS	Renewable Portfolio Standard
RTIP	Regional Transportation Improvement Program
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
SEER	Seasonal Energy Efficiency Ratio
SEMS	Standard Emergency Management System
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SH	Scenic Highway
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigation, and Cleanup
SLM	sound level meter
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SOI	Sphere of Influence
SOS	Secondary Open Space
SPA	Special Planning Area
SPA-5	Special Planning Area 5
SPCC	Spill Prevention, Control, and Countermeasure Plan
SPWN	warm and cold water spawning
SR	State Route
SRA	State Responsibility Area
SRI	solar reflective index

Acronym/Abbreviation	Definition
SRRE	Source Reduction and Recycling Element
SSA	Storm and Sanitary Analysis
SSMP	Sewer System Management Plan
SSMPU	Sanitary Sewer Master Plan Update
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWMP	Storm Water Management Program
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	Tribal Cultural Resource
TDF	travel demand forecasting
TDM	Transportation Demand Management
TDS	total dissolved solids
TIA	traffic impact analysis
TK	Transitional kindergarten
TMDL	total maximum daily loads
UPA	Urban Permit Area
USDA	U.S. Department of Agriculture
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tanks
UWMP	Urban Water Management Plans
VELB	valley elderberry longhorn beetle
VLDR	Very Low Density Residential
VMT	vehicle miles traveled
VOC	volatile organic compound
V-OS1	Primary Open Space
V-PQ	Public Quasi Public
WARM	freshwater habitat warm
WDR	Waste Discharge Requirement
WEAP	Workers Environmental Awareness Program
WILD	wildlife habitat
WPCP	Water Pollution Control Plant
WSA	water supply assessment
WUI	wildland urban interface
WWTP	wastewater treatment plant
ZEV	Zero-Emissions Vehicle

ES Executive Summary

This section provides a summary of the Draft Environmental Impact Report (EIR) for the proposed Valley's Edge Specific Plan Project (VESP or proposed project). Included in this summary are areas of known controversy and issues to be resolved, a summary of project alternatives, a summary of all project impacts and associated mitigation measures, and a statement of the ultimate level of significance after mitigation is applied.

ES.0 Document Purpose

This EIR was prepared by the City of Chico Community Development Department, as lead agency, to inform decision makers and the public of the potential significant environmental effects associated with the proposed project. This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (California Public Resources Code, Section 21000 et seq.) and the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines; 14 CCR 15000 et seq.) published by the Natural Resources Agency of the State of California.

The purpose of this EIR is to focus the discussion on those potential effects on the environment resulting from implementation of the proposed project which the lead agency has determined may be significant. Potentially feasible mitigation measures are recommended, when applicable, that could reduce or avoid significant environmental impacts.

ES.1 Project Location

The approximately 1,448-acre project site is located in unincorporated Butte County within the City of Chico's Sphere of Influence (SOI), at the transition of the valley floor and lower foothill region. The project site is located approximately 1.25 miles east of State Route 99 and is generally bounded by the Steve Harrison Memorial Bike Path (formerly Potter Road) and undeveloped land and the recently approved Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone (Stonegate residential subdivision project) on the west, Honey Run Road and Skyway on the south, undeveloped land on the east, and E. 20th Street, Lazy S Lane and Stilson Canyon Road on the north (see Figures 2-1 and 2-2 in Chapter 2, Project Description).

ES.2 Project Description

The proposed project includes a mixed-use community with a range of housing types, commercial uses, parks, trails and recreation and open space areas. The residential component would consist of approximately 1,392 Multi-Generational or family housing residential units and 1,385 age-restricted (55+) residential units. The commercial portion includes approximately 56 acres designated for a mix of professional and medical offices, neighborhood retail shops and services, multi-family apartments, day care, and hospitality uses. Approximately 672 acres would be designated as parks, trails, open space and preservation, including a large regional park, a community park, neighborhood parks, mini parks and tot lots, and an active adult park.

ES.3 Project Objectives

Project objectives facilitate analysis of reasonable alternatives to the proposed Project. Reasonable alternatives must be analyzed in accordance with Section 15126.6 of the CEQA Guidelines.

The project objectives are as follows:

- Prepare a Specific Plan that is consistent with and implements the policy framework of the Chico 2030 General Plan, including direction provided for the Doe Mill/Honey Run SPA.
- Create a Specific Plan that is both beneficial to the community, and economically viable for development.
- Create a planned community with a village core to serve as the community's social, civic and economic hub.
- Provide housing that responds to demographic shifts, such as the need for senior housing, and replacement housing due to the Camp Fire.
- Promote healthy, livable and complete neighborhoods by providing community gathering places, parks, schools, open space/greenways, retail areas, shopping areas, employment areas, and pedestrian and bicycle trails.
- Promote outdoor recreation by creating space and facilities that foster play, exercise, adventure and social interaction.
- Use open space to preserve and protect sensitive cultural resources and biological resources, including natural drainages.
- Integrate natural landforms, features and open space corridors with the land use plan and project design.
- Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and both conventional and electric vehicles.
- Develop employment opportunities through construction, maintenance and operation of infrastructure, housing, commercial and public uses.

ES.4 Summary of Environmental Impacts and Mitigation Measures

Table ES-1, Summary of Environmental Impacts and Mitigation Measures, provides an overview of the impact analysis and a summary of environmental impacts (before and after mitigation) resulting from implementation of the project pursuant to CEQA Guidelines Section 15123(b)(1). For a more detailed discussion of project impacts, please see Chapter 4 of this EIR.

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.1 Aesthetics			
4.1-1: The proposed project could adversely affect a scenic vista.	Less than Significant	None required	Less than Significant
4.1-2: The proposed project could degrade the existing visual character or quality of public views of the site and its surroundings.	Significant	**AES-1:** Future residential and commercial development would be reviewed pursuant to Chapter 19.18 of the Chico Municipal Code. Review and approval of any site plans and architectural designs would be required prior to the issuance of a building permit by the project's Design Review Committee, City planning staff, and the City's Architectural Review and Historic Preservation Board (if required), unless the proposed development is exempt from design review under Title 19.	Significant and Unavoidable
4.1-3: The proposed project could create light or glare which could adversely affect day or nighttime views in the area.	Less than Significant	None required.	Less than Significant
4.1-4: The proposed project could result in a significant cumulative impact related to scenic vistas and quality of public views or visual character.	Significant	Implement Mitigation Measure AES-1.	Significant and Unavoidable

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.1-5: The proposed project could result in a significant cumulative impact related to light and glare.	Less than Significant	None required.	Less than Significant
4.2 Air Quality			
4.2-1: The proposed project could conflict with implementation of air quality plans.	Significant	**AQ-1:** Implement Mitigation Measures AQ-2 through AQ-5, which would reduce operational-related energy consumption and mobile air quality emissions.	Less than Significant
4.2-2: The proposed project could result in a cumulatively considerable net increase in criteria pollutants.	Significant	**AQ-2:** **Idling Restriction**. For commercial land uses that include truck idling, idling for periods of greater than five (5) minutes shall be prohibited. Signage shall be posted at truck parking spots, entrances, and truck bays advising that idling time shall not exceed five (5) minutes per idling location. To the extent feasible, the tenant shall restrict idling emission from trucks by using auxiliary power units and electrification. Electrical power connections shall be installed at loading ducks so that TRUs (Transport Refrigerated Units) can be plugged in when stationary. **AQ-3:** **Energy Conservation**. The City shall ensure the following energy conservation measures are incorporated into all proposed building plans, as applicable: (a) Install Energy Star rated heating, cooling, lighting, and appliances. (b) Outdoor lighting shall be light emitting diodes (LED) or other high-efficiency lightbulbs. (c) Provide information to future residents through handouts to be provided upon occupancy on energy efficiency, energy efficient lighting and lighting control systems, energy management, and existing energy incentive programs.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(d) Non-residential structures shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof. (e) Outdoor pavement, such as walkways and patios, shall include paving materials with 3-year SRI of 0.28 or initial SRI of 0.33. (f) Residential homes shall include a modest cool roof, defined as Cool Roof Rating Council (CRRC) Rated 0.15 aged solar reflectance and 0.75 thermal emittance. (g) Use of Heating, Ventilation and Air Conditioning (HVAC) equipment with a Seasonal Energy Efficiency Ratio (SEER) of 12 or higher. (h) Installation of water heaters with an energy factor of 0.92 or higher. (i) Maximize the use of natural lighting and include daylighting (e.g., skylights, windows) in rooms with exterior walls that would normally be occupied. (j) Include high-efficacy artificial lighting in at least 50% of unit fixtures. (k) Install low-NOx water heaters and space heaters, solar water heaters, or tank-less water heaters. (l) Residential homes shall be equipped with outdoor electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment. **AQ-4: Purchase Offsets**. Prior to the City's approval of a final map for a project phase which would result in project-wide emissions exceeding 25 lbs./day of ROG or 25 lbs./day of NOx or 80 lbs./day of PM_{10}, the project developer shall participate in an Offsite Mitigation Program, based on the Butte County Air Quality Management District (BCAPCD) CEQA Handbook, by paying the equivalent amount of money, which is equal to the contribution of pollutants (ROG, NOx, and PM) for that final map phase which exceeds the BCAQMD thresholds of	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		significance. Final details are to be approved by the BCAQMD and City for calculating the payments to the Off-site Mitigation Program. **AQ-5:** Implement the Transportation Demand Management program included in Mitigation Measure TRAF-2.	
4.2-3: The proposed project could expose sensitive receptors to substantial pollutants.	Significant	**AQ-6:** **Construction Equipment Emissions Reductions.** The following measures shall be incorporated into the proposed project to reduce construction criteria air pollutant emissions, including ROG, NO_x, PM_{10}, and $PM_{2.5}$, generated by construction equipment used for future development projects implemented under the proposed VESP: (a) For off-road equipment with engines rated at 75 horsepower or greater, no construction equipment shall be used that is less than Tier 4 Interim. An exemption from these requirements may be granted by the City in the event that the project developer documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment.[1] Before an exemption may be considered by the City, the project developer shall be required to demonstrate that two construction fleet owners/operators in the Sacramento Valley Region were contacted and that those owners/operators confirmed Tier 4 Interim or better equipment could not be located within the Sacramento Valley Region. (b) Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions. (c) Properly tune and maintain all construction equipment in accordance with manufacturer's specifications.	Less than Significant

[1] For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded from a Tier 4 Interim to a higher tier (i.e., Tier 4 Final) or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards.

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(d) Where feasible, employ the use of electrical or natural gas-powered construction equipment, including forklifts and other comparable equipment types. (e) To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction. AQ-7: **Health Risk Assessment Requirements**. Consistent with the California Air Resources Board's recommendations on siting new sensitive land uses, a formal health risk assessment shall be required if future uses include a large gas station, dry cleaner, or any other types of uses that could create TACs. Preparation of a health risk assessment by the project applicant may be required by the City under the following conditions: (a) Gasoline Dispensing Facilities. For any large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) within 300 feet of a sensitive receptor. For any typical gas dispensing facility (with a throughput of less than 3.6 million gallons per year) within 50 feet of a sensitive receptor. (b) Dry Cleaners Using Perchloroethylene. For any dry cleaning operation within 300 feet of a sensitive receptor. For operations with three of more machines, consult with the Butte County Air Quality Management District for when a health risk assessment shall be prepared as the distance to the closest sensitive receptor may be less than 300 feet. (c) Other Sources of Toxic Air Contaminants. For other sources of TACs, the City shall evaluate the need to prepare a health risk assessment based on the types of TACs and the distance to sensitive receptors. Implement Mitigation Measures AQ-2 through AQ-5 to further reduce operational-related energy consumption and mobile air quality emissions.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.2-4: The proposed project could generate an increase in other emissions or odors.	Less than Significant	None required	Less than Significant
4.2-5: The proposed project could result in a cumulative impact related to air quality.	Significant	Implement Mitigation Measures AQ-2 through AQ-5.	Less than Significant
4.3 Biological Resources			
4.3-1: The proposed project could have a substantial adverse effect on a candidate, sensitive, or special-status species.	Potentially Significant	**BIO-1: On-Site Preserves.** The developer shall prepare a Habitat Mitigation and Monitoring Plan, record easements, and complete other requirements, as necessary, to establish the two Butte County Meadowfoam preserves and the other preserve on the VESP project site in compliance with all applicable state and federal resource agency permits. The preserves shall be separated from any development by a minimum of 250 feet unless site-specific hydrological analysis accepted by the U.S. Fish and Wildlife Service demonstrates that a reduced separation would still prevent direct or indirect effects to Butte County meadowfoam within the preserve. The VESP Habitat Mitigation and Monitoring Plan shall include at a minimum: management techniques to be used on the preserves; monitoring methods and frequencies to detect changes in Butte County Meadowfoam and allow for adaptive management; and a funding strategy to ensure that prescribed monitoring and management would be implemented in perpetuity to ensure efficacy of the preserves. Management methods shall include controls on introduction and spread of invasive plant species, and requirements for fencing to control public access and pet entry into preserves. No development shall be approved by the City within 500 feet of the avoidance area until the preserves are established.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		BIO-2: Nesting Bird Surveys (including and not limited to Loggerhead Shrike, and Yellow Warbler). Nesting bird surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, on-site and for off-site infrastructure, including site clearing and tree removal and tree removal for installation of required off-site utilities. (Note: BIO-2 is consistent with AMM2, 3, 5, and 8 in the BRCP (Butte County 2019)). Preconstruction surveys for these species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met. (a) A qualified biologist shall conduct a preconstruction survey for nesting birds approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (March through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds, as feasible. (b) If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 300 feet, and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. (c) If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. It is recommended that disturbing potential nesting habitat (i.e.,	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		trimming and/or vegetation removal) be performed outside of the nesting season (September through February) to avoid impacts to nesting birds. (d) If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted in close proximity to the nest. **BIO-3: Burrowing Owl**. Burrowing owl surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including on-site and off-site (infrastructure) clearing and tree removal. (Note: BIO-3 is consistent with AMM2, 3, 5, 8, and 19 in the BRCP (Butte County 2019)). Preconstruction surveys for this species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met. (a) Within 14 days prior to the anticipated start of construction, a qualified biologist shall conduct preconstruction surveys within the project site to identify burrowing owls or their nesting areas. This survey shall follow survey protocols as developed by the Burrowing Owl Consortium (CDFW 2012). If no active burrows or burrowing owls are observed, no further mitigation is required. If a lapse in construction of 15 days or longer occurs during the nesting season, additional preconstruction surveys shall be repeated before work may resume. (b) If burrowing owls or active burrows are identified within the project site during the preconstruction surveys, the following measures shall be implemented:	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• During the non-breeding season for burrowing owls (September 1 through January 31), exclusion zones shall be established around any active burrows identified during the preconstruction survey. The exclusion zone shall be no less than 160 feet in radius centered on the active burrow. With approval from the City after consultation with California Department of Fish and Wildlife (CDFW) and a qualified biologist, burrowing owls shall be passively evicted and relocated from the burrows using one-way doors. The one-way doors shall be left in place for a minimum of 48 hours and shall be monitored daily by the biologist to ensure proper function. Upon the end of the 48-hour period, the burrows shall be excavated by the biologist with the use of hand tools and refilled to discourage reoccupation. • During the breeding season (February 1 through August 31), a qualified biologist familiar with the biology and behavior of this species shall establish exclusion zones of at least 250 feet in radius centered on any active burrow identified during the preconstruction survey. No construction activities shall occur within the exclusion zone as long as the burrow is active and young are present. Once the breeding season is over and young have fledged, passive relocation of active burrows may proceed as described in measure BIO-3(b), above. • The buffer widths may be reduced with the following measures: o A site-specific analysis, reviewed and approved by City after consultation with CDFW, shall be prepared by a qualified biologist that documents and describes how the nesting or wintering owls would not be adversely affected by construction activities; o Monitoring shall occur by a qualified biologist for a minimum of 10 consecutive days following initiation of construction indicating that the owls do not exhibit adverse reactions to construction activities;	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		○ Burrows are not in danger of collapse due to equipment traffic; and ○ Monitoring is continued by a qualified biologist at least once a week through the nesting/wintering cycle at the site and no change in behavior by owls is observed; biological monitoring reports shall be submitted to CDFW. **BIO-4: Swainson's Hawk**. Swainson's hawk surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including on-site and off-site (infrastructure) clearing and tree removal. (Note: BIO-4 is consistent with AMM2, 3, and 8 in the BRCP (Butte County 2019)). Preconstruction surveys for this species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met. (a) If construction (including site clearing and grading) occurs during the nesting season for Swainson's hawk (March 1 through August 31), a qualified biologist shall conduct preconstruction surveys no more than 15 days prior to construction to identify nesting Swainson's hawk within 0.25 mile of the project site. If a lapse in project-related construction activities of 15 days or longer occurs, additional preconstruction surveys shall be conducted prior to reinitiating work. (b) If an active Swainson's hawk nest is identified within 0.25 mile of the project site, an exclusion buffer shall be established in consultation with the biologist and California Department of Fish and Wildlife (CDFW). No construction work such as grading, earthmoving, or any operation of construction equipment shall occur within the buffer zone unless in consultation with and approved by CDFW. Construction may commence normally in the buffer zone if the nest becomes inactive (e.g., the young have fully fledged), as determined by the qualified biologist.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		BIO-5: Bats (including Pallid Bat and Western Red Bat). Bat surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including site clearing and tree removal on the project site and associated with construction of off-site wastewater utilities. (Note: BIO-5 is consistent with AMM2 and 3 in the BRCP (Butte County 2019)). Preconstruction surveys for these species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met. A qualified biologist shall conduct a preconstruction survey for bat roosts within 14 days prior to project construction activities (including site clearing and grading). The survey shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey shall be flagged or marked. If bats (individuals or colonies) are detected, the California Department of Fish and Wildlife (CDFW) shall be notified immediately. If a bat roosting or maternity colony cannot be completely avoided, a qualified biologist shall prepare a bat mitigation and monitoring plan for CDFW review and approval. Potential measures to be included in the plan are restrictions of timing of activities, placement of exclusion barriers when bats are foraging away from the roost, and replacement of roosting structures. **BIO-6: Western Pond Turtle (Off-site Utilities only).** Prior to initiating any site clearing associated with construction of the off-site wastewater utility segment between Cramer Lane and Entler Avenue in the portion within western pond turtle habitat along Comanche Creek, the project developer shall retain a qualified biologist to conduct a western pond turtle pre-construction survey. If western pond turtles are identified in an area where they could be impacted by construction activities, then a biologist trained in relocating western pond turtles shall relocate the	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		turtles outside of the work area or create a species protection buffer (determined by the biologist) until the turtles have left the work area. If a nest is found, a species protection buffer (determined by the biologist) shall be established and avoided until the young have hatched or the eggs proven non-viable, as determined by the biologist. **BIO-7: VELB (Off-site Utilities Only)**. Per the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017), avoidance of elderberry shrubs during construction associated with the off-site wastewater utility lines, specifically shall be achieved by implementing a core avoidance area of 20 feet from the drip-line of each elderberry shrub measuring 1 inch or greater in diameter at ground level. The following avoidance and minimization measures shall be implemented by the project developer or construction contractor(s) prior to and during construction activities: (a) *Fencing*. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible. (b) *Avoidance area*. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the dripline, depending on the type of activity. (c) *Worker education*. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance. (d) *Construction monitoring*. A qualified biologist shall monitor the work area at appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the construction specifics	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		and, if required, the biologist shall consult with the U.S. Fish and Wildlife Service. (e) *Timing*. To the extent feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, shall be conducted outside of the flight season of the VELB (March - July). (f) *Trimming/Mowing*. No trimming of the elderberry shrubs shall occur and no mowing or mechanical weed removal within the drip-line of the elderberry shrub shall be allowed between the months of March through July, when the adult VELB are active.	
4.3-2: The proposed project could have an adverse effect on riparian habitat or some other sensitive natural community.	Potentially Significant	**BIO-8: Sensitive Natural Communities**. The following Best Management Practices shall be implemented by the project developer or construction contractor(s) during construction of all trail construction or utility extensions within 100 feet of the contiguous tree canopy associated with the Valley foothill riparian woodland along Comanche Creek, especially for any drainage crossings, to control pollutant sources associated with the handling and storage of construction materials and equipment, as well as waste management and disposal. (Note: BIO-8 is consistent with AMM4, 5, 7, 11, 15, 17, and 18 of the BRCP (Butte County 2019)). (a) Construction raw materials (e.g., concrete mix, paints, petroleum products) shall be stored in designated areas that are located at least 100 feet away from the top of bank of avoided drainages and are surrounded by earthen berms or other barriers, if necessary. (b) Year-round, install temporary barriers around soil stockpile perimeters to prevent contact with stormwater when required. Temporary barriers can be berms, dikes, silt fences, straw bales, or sandbag barriers. During the rainy season (generally December to April), cover inactive soil stockpiles or protect them with soil stabilization at all times. During the non-rainy season, cover	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		inactive soil stockpiles or protect them with linear barriers prior to rain events. (c) Wash out concrete trucks off-site, in designated areas. If the trucks are washed on site, contain the wash water in a temporary pit adjacent to the construction activity where waste concrete can harden for later removal, no nearer than 100 feet from the top of bank of avoided drainages. Place signs at the designated washout locations and instruct drivers of the washout locations. Avoid washing fresh concrete from the trucks, unless the runoff is drained to a berm or level area, at least 100 feet away from the top of bank of avoided drainages. (d) Collect non-hazardous waste construction materials (e.g., wood, paper, plastic, cleared trees and shrubs, scrap metal, rubber, glass) and deposit in covered dumpsters at a designated waste storage area on-site at least 100 feet away from the top of bank of avoided drainages. Recyclable construction materials shall be stored separately for recycling. (e) Hazardous materials shall be stored in portable metal sheds with secondary containment. The quantities of these materials stored on-site shall reflect the quantities needed for site construction. Avoid over-application of fertilizers, herbicides, and pesticides. Do not mix hazardous waste with other waste produced on site. Contract with a Certified Waste Collection contractor to collect hazardous wastes for disposal at an approved hazardous waste facility. Waste oil and other equipment maintenance waste shall be properly disposed of in compliance with federal, state and local laws, regulations and ordinances. (f) Areas temporarily disturbed during construction, for both on-site and off-site utilities, shall be revegetated with native species or sterile non-native species to reduce the spread of invasive plants in the project area. Decontamination of tools and equipment shall be required prior to entering the project site to prevent	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		introduction and/or spread of invasive species in the area. During operation of the project, the Homeowners Association shall retain a qualified biologist to monitor trails within open space areas every 5 years to determine whether vegetation and soil disturbance is extending outside designated trails. Open space trails shall also be monitored for establishment and spread of non-native invasive plant species. If new non-native plants are found during monitoring, the Homeowners Association shall prepare and implement a plan to eradicate the non-native plant species, in coordination with the City. (g) Prior to the initiation of ground-disturbance activities, the limits of disturbance within 100 feet of the riparian corridor shall be fenced and sediment and erosion control measures shall be utilized, which could include, but are not be limited to, biodegradable straw wattles free of weed seeds, silt fencing, or biodegradable erosion control mats/blankets. No construction, staging areas, or other ground-disturbance activities shall be permitted beyond the fencing. **BIO-9: Tree Protection**. To protect existing trees on the project site and along the off-site utilities areas from damage associated with construction activities and to avoid soil compaction in the root zone, the project developer or construction contractor(s) shall implement the below measures in addition to those required for compliance with the goals and policies of the City of Chico 2030 General Plan, City of Chico Municipal Code, (Title 16, Chapter 16.66), the Oak Woodland Mitigation and Management Plan (OWMMP; Appendix E of the VESP), and AMM 11 of the BRCP (Butte County 2019). (a) No construction vehicles, construction equipment, mobile offices (e.g., trailer), or materials shall be parked, stored or unnecessarily located within the driplines of any trees to be retained by the project.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(b) If work or temporary traffic must proceed within the driplines, one of the following techniques shall be followed: (1) place 6-12 inches of mulch in the work or traffic area; (2) place at least 4 inches of mulch in the work or traffic area and then place sheets of ¾ inch thick plywood or road mats with 4 inch thick layer of mulch; or (3) place 4 to 6 inches of gravel with staked geotextile fabric beneath. (c) Soil surface removal greater than one foot shall not occur within the driplines of retained trees. No cuts shall occur within five feet of their trunks. (d) To the extent feasible, earthen fill greater than one foot deep shall not be placed within the driplines of retained trees, and no fill shall be placed within five feet of their trunks. (e) Underground utility line trenching shall not be placed within the driplines of retained trees. If it is absolutely necessary to install underground utilities within the driplines of preserved trees, the trench shall either be bored or drilled, but not within five feet of the trunk.	
4.3-3: The proposed project could have an adverse effect on protected wetlands.	Potentially Significant	**BIO-10: Aquatic Resources**. To mitigate for the loss of potentially jurisdictional waters of the United States and/or waters of the State, the project developer(s) shall be required to create, preserve, or restore jurisdictional waters consistent with applicable no-net-loss policies. Which can be met through compliance with Clean Water Act or Waste Discharge Requirements (WDRs), as applicable. If Section 404, 401, or WDR authorizations are required, mitigation acreage requirements shall be determined in consultation with the U.S. Army Corps of Engineers, and the Regional Water Quality Control Board. In addition, if construction activities impact California Department of Fish and Wildlife (CDFW) jurisdictional resources, the project developer(s) shall obtain, and comply with, a Lake and Streambed Alteration Agreement from CDFW.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.3-4: The proposed project could interfere with the movement of fish or wildlife species, established migratory wildlife corridors, or the use of native wildlife nursery sites.	Less than Significant	None required	Less than Significant
4.3-5: The proposed project could contribute to cumulative impacts to special-status plant and wildlife species.	Potentially Significant	Implement Mitigation Measures BIO-1 through BIO-10.	Less than Significant
4.3-6: The proposed project could contribute to a cumulative impact to riparian habitat or some other sensitive natural community.	Less than Significant	None required.	Less than Significant
4.3-7: The proposed project could contribute to a cumulative impact to protected wetlands.	Potentially Significant	Implement Mitigation Measure BIO-10.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.3-8: The proposed project could contribute to a cumulative impact to movement of wildlife species, established migratory wildlife corridors, or the use of native wildlife nursery sites.	Less than Significant	None required.	Less than Significant
4.4 Cultural and Tribal Cultural Resources			
4.4-1: The proposed project could cause a substantial change in the significance of a historical resource.	Less than Significant	None required	Less than Significant
4.4-2: The proposed project could cause a substantial adverse change in the significance of an archaeological resource.	Potentially Significant	**CUL-1: Management of Known and Unanticipated Archaeological Resources.** Prior to initiation of each phase of project construction, the project developer(s) shall hire a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards (SOI-Qualified Archaeologist), to prepare a Cultural Resources Management and Unanticipated Discovery Plan (Management and Discovery Plan) that includes steps to effectively preserve known resources that are planned for avoidance and to appropriately manage potential impacts to unanticipated resources that may be encountered during excavation activities. The Plan shall be subject to review and approval by City planning staff. At a minimum, the Plan shall include the following for archaeological resources:	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Archaeological monitoring zones, and requirements for permitting access to areas under active construction by a qualified archaeologist and designated Native American monitors; • Requirements for establishing and maintaining environmentally sensitive area (ESA) boundaries around known resources, as appropriate; • Actions to be taken, should any unanticipated archaeological resources be discovered during project construction. The Plan shall outline specific protocols to minimize adverse effects associated with: (1) treatment of previously unidentified features, site components, or sites; and (2) treatment of human remains and/or cultural objects; • Daily log preparation; • Agency communication requirements; and • Final monitoring report preparation. Prior to commencement of construction activities, the construction contractor and construction personnel shall attend and complete a Workers Environmental Awareness Program (WEAP) training conducted by a Secretary of the Interior qualified archeologist. The WEAP training shall provide: (1) the types and characteristics of archaeological materials that may be identified (unearthed) during construction and explain the importance of and legal basis for the protection of cultural resources; (2) proper procedures to follow in the event that cultural resources, tribal cultural resources, or human remains are uncovered during ground-disturbing activities, including procedures for work curtailment or redirection; and (3) protocols for contacting the on-site construction supervisor and project archaeologist upon discovery of a resource. CUL-2: **Archaeological and Native American Monitoring.** As outlined under the Management and Discovery Plan required by Mitigation Measure CUL-1, prior to any ground disturbance the project developer shall ensure	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		than a Secretary of the Interior qualified archaeologist is present to monitor earthmoving activities within archaeological monitoring zones, at the discretion of the qualified archaeologist. If any archaeological, paleontological, or historic deposits are identified during activities, ground-disturbing construction in that area shall cease, and a determination of resource significance made. Significant resource sites shall be subject to appropriate measures (e.g. data recovery, impact avoidance, recordation). Prior to the start of grading operations for each project phase the project developer or their representative shall provide reasonable notice and site access to the Mechoopda Indian Tribe of Chico Rancheria (Tribe) for a tribal monitor to be present during ground disturbing activities with the potential to encounter cultural resources of Native American origin or association, as outlined by the Monitoring and Discovery Plan. If archaeological resources (i.e., sites, features, or artifacts) are exposed during construction activities, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, in coordination with the tribal monitor if prehistoric in nature, can evaluate the significance of the find and determine whether or not additional study is warranted. At the discretion of the archaeologist, temporary flagging or staking may be required around the resource to avoid any disturbance from construction equipment. The work exclusion buffer may be adjusted based on the recommendation of the archaeologist. The feasibility of avoidance and preservation in place of any identified cultural resource shall be evaluated prior to considering other management strategies that may be implemented. Depending upon the nature of the find, the archaeologist and tribal monitor (if a resource is prehistoric in age) may simply record the find to appropriate standards (thereby addressing any data potential) and allow work to continue.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		If the archaeologist determines the discovery to be potentially significant under CEQA or the tribal monitor identifies a potential Tribal Cultural Resource (TCR), additional efforts such as preparation of a treatment plan, testing, and/or data recovery may be warranted prior to allowing construction to proceed in this area. Management strategies specific to TCRs and related government-to-government consultation shall be outlined independently in the Management and Discovery Plan. All management strategies recommended by the archaeologist and/or Tribe must be approved by the City of Chico Community Development Director. The developer shall then adhere to the management strategies approved by the City. Ground-disturbing activities may resume once the management strategies have been implemented to the satisfaction of the City's Community Development Director and the qualified archaeologist.	
4.4-3: The proposed project could potentially damage human remains during construction activities.	Potentially Significant	**CUL-3: Human Remains.** If human remains are discovered at any project construction site(s) during any phase of construction, all ground-disturbing activity within 100 feet of the remains shall be halted immediately, and the City of Chico (City) and the Butte County coroner shall be notified immediately. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The developer shall also retain a Secretary of the Interior qualified archaeologist with Native American burial experience to conduct a field investigation of the area, if required, and facilitate communication between the land owner and the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines Section 15064.5(e) and	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Public Resources Code Section 5097.98. The project developer shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 100 feet of the boundaries of the sensitive area defined by the investigation where the remains were discovered. If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code section 5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Public Resources Code Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code Section 5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts to it, including any or a combination of the following: • Avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization, if such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements; • An agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or • Other measures, short of full or partial avoidance or preservation, intended to minimize impacts to the Native American Cultural Place consistent with land use assumptions and the proposed design and	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		footprint of the development project for which the requested grading permit has been approved. After receiving such recommendations, the City shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development. In reaching conclusions with respect to these recommendations, the City shall consult with both the project developer and the most interested and appropriate tribal organization.	
4.4-4: The proposed project could cause an adverse change in the significance of a tribal cultural resource.	Potentially Significant	**CUL-4: Unanticipated Discovery of a Tribal Cultural Resource.** Mitigation Measures CUL-1 and CUL-2 require developing and implementing management strategies to be implemented in the event an unanticipated TCR is identified. These strategies shall include the following, at a minimum: The Management and Discovery Plan to be implemented as part of Mitigation Measure CUL-1 which requires the following: In the event a potential TCR is encountered during construction, all construction activities within 100 feet of the find shall be halted and the City Community Development Director notified. The City shall then immediately notify the Native American Heritage Commission and the Mechoopda Indian Tribe of Chico Rancheria (Tribe). If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in the Management and Discovery Plan. If the City determines that the potential resource appears to be a tribal cultural resource (as defined by PRC Section 21074), the Tribe or any other affected Native American Indian tribe would be provided a reasonable period of time to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered tribal cultural resources. Depending on the nature of the potential resource and tribal recommendations, review by a	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		qualified Secretary of the Interior archaeologist may be required, as determined by the City. Implementation of proposed recommendations shall be made based on the determination of the City that the approach is reasonable and feasible. All activities shall be conducted in accordance with regulatory requirements.	
4.4-5: The proposed project could have a cumulative impact on historic-era built environment resources, archeological resources, as well as human remains and tribal cultural resources.	Potentially Significant	Implement Mitigation Measures CUL-1 through CUL-4.	Less than Significant
4.5 Energy			
4.5-1: The proposed project could result in consumption of energy or energy resources during project construction or operation.	Less than Significant	None required	Less than significant
4.5-2: The proposed project could conflict with plans for renewable energy or energy efficiency.	Less than Significant	None required	Less than significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.5-3: The proposed project could result in a cumulatively considerable impact due to consumption of electricity, natural gas, diesel or petroleum during construction or operation.	Less than Significant	None required	Less than Significant
4.6 Geology and Soils			
4.6-1: The proposed project could be affected in the event of a rupture of a known earthquake fault.	No Impact	None required	No Impact
4.6-2: The proposed project could be affected by strong seismic ground shaking and secondary seismic hazards, including seismic-related ground failure and liquefaction.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.6-3: The proposed project could be affected by or result in adverse effects involving landslides.	Less than Significant	None required	Less than Significant
4.6-4: The proposed project could result in substantial soil erosion or the loss of topsoil.	Less than significant	None required	Less than Significant
4.6-5: The proposed project could be developed on unstable soils or on soils that would become unstable as a result of the project.	Less than significant	None required	Less than Significant
4.6-6: The proposed project could be developed on expansive soils.	Less than significant	None required	Less than Significant
4.6-7: The proposed project could destroy a paleontological resource or unique geologic feature.	Potentially Significant	**GEO-1: Unanticipated Discovery.** Project developers/contractor(s) shall inform construction workers (site clearing, grading and trenching) of the sensitivity of the project site for paleontological resources. In the event that known or suspected paleontological resources (e.g., fossils) are unearthed during grading and site excavation, the area of discovery shall be roped off with a 50-foot radius buffer and remain off-limits until cleared by a qualified paleontologist. The applicant or their contractor shall retain a qualified paleontologist that meets the Society of Vertebrate Paleontology (SVP) (2010) guidelines, who shall document the nature, location, and taxa of the find. The qualified	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		paleontologist shall make recommendations for the treatment of the discovery. Measures may include monitoring, recording the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City for review. If paleontological materials are recovered, this report also shall be submitted to a paleontological repository such as the University of California, Museum of Paleontology, along with significant paleontological materials. Once documentation and collection of the find is completed, the paleontologist shall remove the rope and allow construction to recommence in the area of the find.	
4.6-8: The proposed project could result in a cumulative impact related to loss of paleontological resources.	Potentially Significant	Implement Mitigation Measure GEO-1.	Less than Significant
4.7 Greenhouse Gases			
4.7-1: The proposed project could generate an increase in greenhouse gas emissions.	Significant	**GHG-1:** The City shall ensure that each future development project provide storage areas for recyclables and green waste, and food waste storage, if a pick-up service is available. **GHG-2:** Implement Mitigation Measures AQ-2 and AQ-3 (Section 4.2, Air Quality), to reduce operational-related energy consumption and GHG emissions.	Significant and Unavoidable
4.7-2: The proposed project could conflict with a plan, policy or regulation to reduce greenhouse gas emissions.	Significant	Implement Mitigation Measures AQ-2 and AQ-3 (Section 4.1, Air Quality) and GHG-1.	Significant and Unavoidable

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.8 Hazards and Hazardous Materials			
4.8-1: The proposed project could create a hazard through the routine transport, use, or disposal of hazardous materials.	Potentially Significant	**HAZ-1: Hazardous Materials Building Survey.** Prior to demolition and removal of the former ranch buildings, the project developer or contractor shall retain a licensed hazardous remediation contractor to conduct a hazardous materials building survey to determine if asbestos-containing materials and/or lead-based paints are present. A report documenting material types, conditions and general quantities shall be provided, along with photos of positive materials and diagrams. Should these materials be present, demolition plans and contract specifications shall incorporate any abatement procedures consistent with federal, State and local requirements specific to the removal and proper disposal of materials containing asbestos or lead-based paint. All materials shall be abated in accordance with local, State, and federal requirements by a licensed abatement contractor. Applicable regulations include but are not limited to those of the EPA and Cal/OSHA.	Less than Significant
4.8-2: The proposed project could create a hazard through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant	None required	Less than Significant
4.8-3: The proposed project could emit hazardous emissions or handle hazardous materials,	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
substances, or waste within one-quarter mile of an existing or proposed school.			
4.8-4: The proposed project could impair implementation of an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None required	Less than Significant
4.8-5: The proposed project could expose people or structures to loss, injury or death involving wildland fires.	Potentially Significant	Implement Mitigation Measures WFIRE-1 and WFIRE-2.	Less than Significant
4.8-6: The proposed project could contribute to a cumulative increase in the potential exposure of people to hazards associated with the use and transport of hazardous materials.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.9 Hydrology, Water Quality, Drainage			
4.9-1: The proposed project could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality.	Less than Significant	None required	Less than Significant
4.9-2: The proposed project could decrease groundwater supplies and interfere with groundwater recharge impeding sustainable groundwater management of the Vina Subbasin.	Less than Significant	None required	Less than Significant
4.9-3: The proposed project could alter the existing drainage pattern increasing surface water runoff in a manner that would increase	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
flooding on or off-site, contribute runoff water which could exceed the City's stormwater drainage system capacity, or result in substantial erosion or siltation on- or off-site.			
4.9-4: The proposed project could alter the existing drainage pattern that could impede or redirect flood flows.	Less than Significant	None required	Less than Significant
4.9-5: The proposed project could increase the release of pollutants due to project inundation.	Less than Significant	None required	Less than Significant
4.9-6: The proposed project could conflict with a water quality control plan or sustainable groundwater management plan.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.9-7: The proposed project could contribute to a cumulative impact to water quality.	Less than Significant	None required	Less than Significant
4.9-8: The proposed project could contribute to a cumulative impact related to flooding, drainage capacity, and erosion and sedimentation.	Less than Significant	None required	Less than Significant
4.9-9: The proposed project could contribute to a cumulative impact to groundwater supply and groundwater recharge that could impede the sustainable management of the Vina Subbasin.	Less than Significant	None required	Less than Significant
4.10 Noise			
4.10-1: The proposed project could result in an increase in temporary or	Potentially Significant	**NOI-1: Construction Noise.** The following measure shall be implemented by all construction contractors to reduce the effects of noise levels generated from construction activities. • Construction operations and related activities within the project area shall be limited to the daytime construction noise thresholds	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
permanent ambient noise levels in excess of City standards.		outlined in the City of Chico Municipal Code Section 9.38.060. Construction shall be limited to the weekday hours of 7:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. For construction activity taking place between June 15th and September 15th, construction hours shall be limited to the weekday hours of 6:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. The City of Chico shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception. • All construction contracts shall include language stating that construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal combustion powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed manufacture specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function and minimization of noise. • Portable and stationary site support equipment (such as generators, compressors, rock crushers, and cement mixers) shall be located more than 100 feet away, or as far as practicable from nearby noise-sensitive receptors. • Impact tools (e.g., jackhammer, rock drill, hoe ram, etc.) employed at distances less than 100-feet from noise-sensitive receptors shall have the working area/impact area shrouded or shielded, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application specific noise shields or barriers. • Construction equipment shall not be allowed to idle for extended periods (e.g., 15 minutes or longer) of time within 50 feet of noise-sensitive receptors.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• A disturbance coordinator shall be designated by each general contractor, which shall post contact information in a conspicuous location near the entrance of the construction site so that it is clearly visible to nearby receivers most likely to be disturbed. The coordinator shall manage complaints resulting from the construction noise. Reoccurring disturbances shall be evaluated by a qualified acoustical consultant retained by the project developer or contractor to ensure compliance with applicable standards. **NOI-2: Operation Noise.** Future plans or tentative maps submitted for building and/or grading permits which incorporate potentially significant noise generating elements shall include an acoustical analysis (noise study) that verifies and demonstrates the use would meet applicable City noise standards. The analysis shall be provided to the City's Community Development Department for review. Projects determined to have the potential to generate or expose noise-sensitive uses to noise levels exceeding the City of Chico noise standards or result in a substantial (3 to 5 dB or greater) permanent increase in ambient noise levels shall incorporate noise-source control measures as specified in the acoustical analysis, such as site planning, silenced equipment, enclosures, or noise barriers. **NOI-3: Operation Mechanical Noise.** Minimize mechanical noise levels of buildings constructed in the Village Core or Village Commercial areas through equipment selection, project-site design, and construction of localized barriers or parapets. Selection of mechanical equipment shall consider radiated outdoor sound pressure levels and efficiency as the primary criteria. Mechanical equipment shall be selected to provide compliance with the City's non-transportation noise level thresholds. Should the selection and placement of mechanical equipment that inherently complies with the City's criteria not be possible, localized noise barriers for equipment located at grade or rooftop parapets shall be constructed around the equipment so that	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		line-of-site from the noise source to the property line of the adjacent noise-sensitive receptors is blocked. Where a noise barrier, parapet or intervening structure is required to achieve compliance, a noise analysis or compliance noise level monitoring shall be performed by a qualified acoustical consultant that demonstrates compliance with the City's non-transportation noise level thresholds subject to review and approval of the City's Community Development Director. NOI-4: **Commercial Delivery Noise.** Loading, unloading and delivery areas of commercial uses within the Village Core and Village Commercial areas shall be located so that the buildings shield nearby noise-sensitive land uses from noise generated by loading docks and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise-sensitive uses. Loading dock activity and delivery truck activity at the commercial uses shall only occur during the daytime hours of 7 AM to 10 PM, in order to prevent evening and nighttime sleep disturbance at nearby noise-sensitive land uses, unless the operations can be demonstrated to be in compliance with the City's nighttime noise level thresholds. The City's Community Development Director or public works director may issue a permit exempting certain operations or activities from compliance with this measure at their discretion. NOI-5: **Outdoor Recreation Noise.** Minimize excessive sound levels associated with outdoor recreation activities and community events at the Community Park and Village Core Park through application of project-site design and limitations on event capacity and allowable equipment and operational hours. Use of amplified sound systems in recreational areas adjacent to noise-sensitive receptors shall be limited to daytime hours (7 AM to 9 PM), with the exception of temporary use permits granted by the City's public works director (per City Code Section 9.38.080). The use of amplified sound systems, audible at a distance of 50-feet or more, shall be prohibited within the quasi-public and public use areas, without prior authorization.	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.10-2: The proposed project could result in excessive groundborne vibration or groundborne noise levels during construction.	Less than Significant	None required	Less than Significant
4.10-3: The proposed project could contribute to an increase in cumulative traffic noise exposing project residents to increased noise and exceed City standards.	Potentially Significant	**NOI-6:** Project developer(s) shall fund and construct either a noise protection wall for existing off-site residences along E. 20th Street or a portion of E. 20th Street shall be repaved with quiet pavement prior to completion of 2,222 units or 80% of project completion. If selected, the alignment and design specifications for a noise protection wall shall be determined by input from a qualified acoustician, and is assumed to be a solid noise protection wall free from openings or gaps, with a minimum total surface density of 4 lbs/sq ft, and a minimum height of 6-feet relative to the adjacent building pad. Alternatively, a portion of E. 20th Street shall be repaved with "quiet pavement" (e.g., rubberized asphalt, open-graded asphalt, or whatever quiet pavement technology is available, etc.) between Potter Road to the west and Dawncrest Drive to the east. The timing and need for this mitigation measure may be reassessed based on a future noise study conducted by a qualified acoustician and overseen by the Community Development Department after completion of 2,000 units. The details specific to funding the improvements shall be included in the Development Agreement.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.11 Public Services			
4.11-1: The proposed project could result in impacts associated with the construction of new or expanded police or fire facilities.	Less than Significant	None required	Less than Significant
4.11-2: The proposed project could result in impacts associated with construction of new or expanded schools.	Less than Significant	None required	Less than Significant
4.11-3: The proposed project could increase the use of existing neighborhood or regional parks, or other recreational facilities requiring the construction of new parks.	Less than Significant	None required	Less than Significant
4.11-4: The proposed project could contribute to a cumulative increase in demand for fire services, which	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
could result in the need to construct new fire facilities.			
4.11-5: The proposed project could contribute to a cumulative increase in demand for police services, which could result in the need to construct new police facilities.	Less than Significant	None required	Less than Significant
4.11-6: The proposed project could contribute to a cumulative increase in demand for schools, which could result in the need to construct of new school facilities.	Less than Significant	None required	Less than Significant
4.11-7: The proposed project could contribute to a cumulative increase in demand for parks or other recreational/ public facilities, which could result in the need to construct new parks or facilities.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.12 Public Utilities			
4.12-1: The proposed project would require the construction of new or expanded water, wastewater treatment, electric power, or natural gas lines.	Less than Significant	None required	Less than Significant
4.12-2: The proposed project would increase demand for water supplies to serve the project during normal, dry, and multiple dry years.	Less than Significant	None required	Less than Significant
4.12-3: The proposed project could generate an increase in wastewater demand that exceeds the capacity of the treatment plant to serve the project.	Less than Significant	None required	Less than Significant
4.12-4: The proposed project could generate an increase in solid waste in excess of	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
landfill capacity or impair attainment of solid waste reduction goals.			
4.12-5: The proposed project would comply with federal, state, and local regulations related to solid waste.	Less than Significant	None required	Less than Significant
4.12-6: The proposed project could contribute to a cumulative impact related to construction of new water, wastewater treatment, electric power, and natural gas facilities, or exceed landfill capacity.	Less than Significant	None required	Less than Significant
4.13 Transportation and Circulation			
4.13-1: The proposed project would generate demand for bicycle facilities.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.13-2: The proposed project would generate demand for pedestrian facilities.	Significant	**TRAF-1: Bike Path/Multi-Use Trail.** Prior to the firs residential building permit in Planning Area 19 (PA-19 or Equestrian Ridge) the project developer shall construct a Class I Bike Path/Multi-use Trail on the north side of Honey Run Road from Skyway to PA-19 located approximately 0.7 miles east on Honey Run Road.	Less than Significant
4.13-3: The proposed project would generate demand for transit facilities.	Less than Significant	None required	Less than Significant
4.13-4: The proposed project would construct new roadways to serve planned growth and connect to existing transportation facilities, which could create hazards related to design features (e.g., sharp curves or dangerous intersections).	Less than Significant	None required	Less than Significant
4.13-5: The proposed project would require emergency access.	Less than Significant	None required	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.13-6: The proposed project would generate an average total VMT per service population that is 86% of the average total VMT per service population for the region.	Significant	**TRAF-2: TDM Plan.** The project developer(s) shall prepare and implement a Transportation Demand Management (TDM) Plan to guide implementation of TDM strategies for residential and commercial development, as outlined below, to achieve a reduction in total VMT per service population of at least 1%: (a) ***Travel Demand Management (TDM) Plan*** – Prior to approval of the first Tentative Map or Use Permit, the project developer(s) shall develop a TDM program for the entire specific plan and shall submit the TDM program to the City of Chico Department of Public Works for review and approval. The TDM program shall be designed to reduce project generated VMT such that the project achieves a VMT/Service Population ratio of 25.9 or better, and to guide implementation of TDM strategies by individual residential and commercial development. The TDM may include off-site VMT reduction measures that would reduce VMT for other service populations within the City to achieve a portion of the 1,288 miles per day, or other regional strategies such as an impact fee program or a VMT mitigation bank/exchange. (b) ***TDM Plan Implementation (Residential)*** – Prior to approval of each Tentative Map, developers of individual residential projects shall demonstrate compliance with the TDM Plan by submitting an implementation strategy report to the City of Chico Department of Public Works for review and approval that implements TDM strategies TRT-3, TRT-5, and TRT-7, or other strategies in the table below from the California Air Pollution Control Officers Association (CAPCOA) strategies, or other quantifiable strategies that are supported by substantial evidence to be implemented to reduce project generated VMT.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)			Level of Significance After Mitigation
		CAPCOA Strategy			
		Category	Measure/Grouping[1]	Strategy Description	
		Land Use/ Location	LUT-5	Increase Transit Accessibility	
			LUT-7	Orient Project Toward Non-Auto Corridor	
			LUT-8	Locate Project near Bike Path/Bike Lane	
			LUT-9	Improve Design of Development	
		Neighborhood Site Enhancements	SDT-1	Provide Pedestrian Network Improvements	
			SDT-2	Provide Traffic Calming Measures	
			SDT-5/LUT-9	Incorporate Bike Lane Street Design (on-site)	
			SDT-7/LUT-9	Provide Bike Parking in Multi-Unit Residential Projects	
			SDT-9/LUT-9	Dedicate Land for Bike Trails	
		Parking Policy/ Pricing	PDT-1	Limit Parking Supply	
			PDT-2	Unbundle Parking Cost from Property Cost	
			PDT-4/PDT-1-3	Require Residential Area Parking Permits	
		Commute Trip Reduction	TRT-3	Provide Ride Sharing Programs	
			TRT-4	Implement Subsidized or Discounted Transit program	
			TRT-5/TRT-1-2	Provide End of Trip Facilities	
			TRT-7	Implement Commute Trip Reduction Marketing	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)			Level of Significance After Mitigation
			TRT-8/TRT-1-2	Implement Preferential Parking Permit Program	
			TRT-9	Implement Car-Sharing Program	
			TRT-10	Implement School Pool Program	
			TRT-13	Implement School Bus Program	
		Transit System	TST-5/TST-3-4	Provide Bike Parking Near Transit	
		Road Pricing/ Management	RPT-4	Install Park-and-Ride Lots Near Transit Stops	

Sources: *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA 2010, Fehr & Peers, 2020.

(a) ***TDM Plan Implementation (Non-Residential)*** – Prior to approval of each Use Permit, developers of individual non-residential projects shall demonstrate compliance with the TDM Plan by submitting an implementation strategy report to the City of Chico Department of Public Works for review and approval that implements the TDM strategies (TRT-3, TRT-5, and TRT-7), or other strategies shown in the table below from the California Air Pollution Control Officers Association (CAPCOA) strategies, or other quantifiable strategies that are supported by substantial evidence to be implemented to reduce project-generated VMT.

CAPCOA Strategy			
Category	*Measure/Grouping*[1]	*Strategy Description*	
Land Use/ Location	LUT-5	Increase Transit Accessibility	
	LUT-7	Orient Project Toward Non-Auto Corridor	
	LUT-8	Locate Project near Bike Path/ Bike Lane	
	LUT-9	Improve Design of Development	

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)				Level of Significance After Mitigation
			Neighborhood Site Enhancements	SDT-1	Provide Pedestrian Network Improvements	
				SDT-2	Provide Traffic Calming Measures	
				SDT-5/LUT-9	Incorporate Bike Lane Street Design (on-site)	
				SDT-6/LUT-9	Provide Bike Parking in Non-Residential Projects	
				SDT-9/LUT-9	Dedicate Land for Bike Trails	
			Parking Policy/ Pricing	PDT-1	Limit Parking Supply	
				PDT-2	Unbundle Parking Cost from Property Cost	
				PDT-3	Implement Market Price Public Parking (On-Street)	
				PDT-4/PDT-1-3	Require Residential Area Parking Permits	
			Commute Trip Reduction	TRT-1	Implement Voluntary Commute Trip Reduction Programs	
				TRT-3	Provide Ride Sharing Programs	
				TRT-4	Implement Subsidized or Discounted Transit program	
				TRT-5/TRT-1-2	Provide End of Trip Facilities	
				TRT-6	Encourage Telecommuting and Alternative Work Schedules	
				TRT-7	Implement Commute Trip Reduction Marketing	
				TRT-8/TRT-1-2	Implement Preferential Parking Permit Program	
				TRT-9	Implement Car-Sharing Program	

Table ES-1. Summary of Impacts and Mitigation Measures

<table>
<tr><th>Environmental Impact</th><th>Level of Significance Prior to Mitigation</th><th>Mitigation Measure(s)</th><th>Level of Significance After Mitigation</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>TRT-11</td><td>Provide Employer-Sponsored Vanpool/Shuttle</td></tr>
<tr><td></td><td>TRT-14</td><td>Price Workplace Parking</td></tr>
<tr><td></td><td>TRT-15</td><td>Implement Employee Parking “Cash-Out”</td></tr>
<tr><td>Transit System</td><td>TST-5/TST-3-4</td><td>Provide Bike Parking Near Transit</td></tr>
<tr><td>Road Pricing/ Management</td><td>RPT-4</td><td>Install Park-and-Ride Lots Near Transit Stops</td></tr>
</table>
Sources: Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010, Fehr & Peers, 2020.

Implementation of the following TDM strategies would reduce the VESP VMT by 1.4%:
• TRT-3 Provide Ridesharing Program – Implement ride match programs that assist potential carpoolers in finding other individuals with similar travel routes.
• TRT-5 Provide End-of-Trip Bicycle Facilities – Install and maintain end-of-trip facilities for employee and visitor use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers.
• TRT-7 Implement Commute Trip Reduction Marketing Strategy– Implement a marketing strategy to promote project employers’ commute trip reduction programs. The marketing strategy must include and on-site or online commuter information service, employee transportation coordinators, on-site or online transit pass sales, and guaranteed ride home services.
</td><td></td></tr>
<tr><td colspan="4">4.14 Wildfire</td></tr>
<tr><td>4.14-1: The proposed project could impair an adopted emergency response plan or emergency evacuation plan in the event of a wildfire.</td><td>Less than Significant</td><td>None required</td><td>Less than Significant</td></tr>
</table>

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
4.14-2: The proposed project may exacerbate wildfire risk exposing future residents to potential wildfire hazards.	Potentially Significant	**WFIRE-1: Construction Fire Protection Plan.** Activities prior to construction including site clearing, grading or trenching, the project developer(s) shall work with the Chico Fire Department to prepare a Construction Fire Prevention Plan to be provided to all future developers. The plan shall address training of construction personnel and provide details of fire-suppression procedures and equipment to be used during construction. Information contained in the plan shall be included as part of project-related environmental awareness training to occur prior to any ground disturbance. At a minimum, the plan shall be consistent with the requirements in California Building Code Chapter 33 and California Fire Code Chapter 33 and shall include the following: • Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, and hot work restrictions; • Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days; • Specifications for adequate water supply to service construction activities; • On-site fire awareness coordinator role and responsibility; • Construction worker training for fire prevention, initial attack firefighting, and fire reporting; • Emergency communication, response, and reporting procedures; • Coordination with local fire agencies to facilitate access through the project site; • Implement all construction-phase fuel modification components prior to combustible building materials being delivered to the site; • Emergency contact information; and • Demonstrate compliance with applicable plans and policies established by state and local agencies.	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		WFIRE-2: Update VESP Firewise Guidelines. The Valley Edge Specific Plan's Firewise Guidelines, Standards & Vegetation Management Standards shall be updated to incorporate the following specifications: • Implement and maintain fuel treatment areas along all project roads and any trails proposed for use by fire apparatus or use as fire/fuel breaks. Fuel treatment areas shall measure 20 feet in width (horizontal) as measured from the outer edge of pedestrian sidewalk or other improved travel surface and shall occur on both sides of the road or trail. Maintenance of treatment areas shall be conducted according to the standards outlined in California Fire Code Chapter 49, Section 4906. • Locate all habitable structures within 150 feet of fire apparatus access roads, also in accordance with CFC Section 503, unless approved otherwise by the Chico Fire Department. • Ensure building materials and construction methods for all structures are in compliance with California Fire Code Chapter 49, Section 4905, for all buildings, not just those residences located along the Wildland Urban Interface perimeter lots.	
4.14-3: The proposed project may exacerbate fire risk associated with the installation and maintenance of project-related infrastructure.	Potentially Significant	Implement Mitigation Measure WFIRE-1.	Less than Significant
4.14-4: The proposed project could expose future residents to hazards associated with	Potentially Significant	**WFIRE-3: Post Fire Activities.** Following any on-site wildfire during project build-out in areas where development may be affected by post-fire risks, a post-fire field assessment shall be conducted by an engineering geologist or civil engineer, in coordination with the Chico Fire Department, to identify any areas that may be subject to increased	Less than Significant

Table ES-1. Summary of Impacts and Mitigation Measures

Environmental Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
post-fire runoff, slope instability, or drainage changes as the site is developed.		risk of post-fire flooding, landslide or erosion. Any recommendations identified by the geologist to mitigate such risk shall be provided to the City of Chico Community Development Director and any applicable Emergency Operations Center for consideration of the work necessary to allow safe re-entry and/or re-occupation of the affected area.	
4.14-5: Implementation of the proposed project could contribute to cumulative impacts on emergency response and evacuation efforts or plans.	Less than Significant	None required	Less than Significant
4.14-6: Implementation of the proposed project could exacerbate wildfire risk to onsite residents resulting in a cumulative contribution.	Potentially Significant	Implement Mitigation Measure WFIRE-2.	Less than Significant

ES.5 Comments Received in Response to the Notice of Preparation

The NOP for this Draft EIR was released on August 14, 2019, and the public comment period closed on September 13, 2019. The City received a total of 32 letters, as shown in the table below. The purpose of the NOP process is to solicit input from public agencies and the public on the scope of the EIR analysis. Opinions on the merits of the project are noted but are not considered relevant for the purposes of defining the scope of the analysis. The Introduction of each technical section in Chapter 4 provides a brief summary of comments relevant to that particular issue area. All of the NOP comment letters received are included in Appendix A.

A brief overview of the primary concerns raised in the NOP comment letters is included below.

- Potential for the project to adversely impact scenic vistas and the foothill viewshed;
- Potential harm to wildlife species, wildlife corridors, and vernal pools;
- Potential impacts to historical resources such as the rock walls and tribal cultural resources;
- Increase in vehicle miles traveled contributing to greenhouse gas emissions;
- Increase in demand for groundwater to supply the proposed project;
- Ability of fire and police to serve the proposed project along with other development in the City and adequate response times;
- Increase in traffic and congestion and the ability of existing and proposed roads to handle this additional traffic;
- Potential risk associated with wildfire hazards due to development within an wildland-urban interface; and
- Potential flooding risk.

Written comments in response to the NOP were received from the following agencies, organizations, Native American tribes, and the public.

Agencies	Organizations	Tribes	Public
Butte County Air Quality Management District	Northern California Carpenters Regional Council	Mechoopda Tribe	Alicia Anderson Betty Volker Brad Sellers
Butte County Department of Development Services	AquAlliance	—	Brent Silberbauer Caroline Burkett Christina Grassmyer
Butte County Department of Public Works	—	—	Grace Marvin Karen Baxter Kathleen Faith
Central Valley Regional Water Quality Control Board	—	—	Les Heringer (M&T Ranch) Lia White Hildi Strandberg

Agencies	Organizations	Tribes	Public
Native American Heritage Commission	—	—	Jim Stevens Johan Zener Marcella Seay
U.S. Army Corps of Engineers	—	—	Merlyn Newlin Paul & Kathy Coots Richard L. Harriman
—	—	—	Stephen Crump Steve Miller Suellen Rowlison Susan Tchudi Terry O'Shea

ES.6 Areas of Controversy/Issues to be Resolved

Section 15123(b)(2) of the CEQA Guidelines requires that areas of controversy known to the lead agency must be stated in the summary prepared as part of the EIR. This includes increase in traffic on area roadways, installation of a roundabout on Skyway, development within the wildland urban interface (WUI), increase in flooding on-site and off-site, and access to affordable housing.

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved; this includes the choice among alternatives and whether or how to mitigate significant impacts; functionality and timing of the roundabout on Skyway; and availability of affordable housing.

ES.7 Summary of Project Alternatives

Section 15126.6 of the CEQA Guidelines identifies the parameters within which consideration and discussion of alternatives to a project should occur. As stated in this section of the guidelines, alternatives must focus on those that are potentially feasible and that may attain most of the basic objectives of the project. Each alternative should be capable of avoiding or substantially lessening any significant effects of the project. The rationale for selecting the alternatives to be evaluated and a discussion of the No Project Alternative are also required, per Section 15126.6.

Alternatives Evaluated

This EIR includes an evaluation of the following alternatives:

Alternative 1 – No Project/No Development Alternative. CEQA requires analysis of the "no project" alternative to describe what would be reasonably expected to occur in the foreseeable future, based on current plans and/or available infrastructure and community services, if the project were not approved. For purposes of this EIR, the No Project Alternative assumes no development would occur, and the site would remain under the jurisdiction of Butte County and in its current undeveloped condition.

Alternative 2 – No Project/2030 General Plan Alternative. This alternative assumes development would occur consistent with the land use assumptions included in the City's 2030 General Plan for this site.

Alternative 3 – Increased Commercial Alternative. This alternative would increase the proportion of commercial land uses developed within the project site and slightly reduce the total number of residential units.

Alternative 4 - Increased Open Space and Higher Density Alternative. This alternative would increase the amount of open space and shift residential land uses to other areas within the project site resulting in an increase in in open space and overall project density. The amount of commercial development would not change.

ES.8 Environmentally Superior Alternative

Table ES-2, Comparison of Impacts of the Alternatives, provides a summary of the alternatives impact analysis considered in the EIR and identifies the areas of potential environmental effects per CEQA, and ranks each alternative as better, the same, or worse than the proposed project with respect to each issue area.

Table ES-2. Comparison of Impacts of the Alternatives

Environmental Issue	Proposed Project Impacts	Alternative 1: No Project/ No Development	Alternative 2: No Project/ 2030 General Plan	Alternative 3: Increased Commercial	Alternative 4: Increased Open Space and Higher Density
Aesthetics	SU	NI ▼	SU ▼	SU ▲	SU ▼
Air Quality	LTS	NI ▼	LTS ▼	LTS ▼	LTS ▼
Biological Resources	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Cultural and Tribal Cultural Resources	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Energy	LTS	NI ▼	LTS ▼	LTS ▼	LTS –
Geology and Soils	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Greenhouse Gas Emissions	SU	NI ▼	LTS ▼	LTS ▼	LTS ▼
Hazards and Hazardous Emissions	LTS	NI ▼	LTS –	LTS –	LTS –
Hydrology and Water Quality	LTS	NI ▼	LTS ▼	LTS –	LTS –
Noise	LTS	NI ▼	LTS ▼	LTS –	LTS –
Public Services	LTS	NI ▼	LTS ▼	LTS –	LTS –
Recreation	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Public Utilities	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Transportation and Circulation	LTS	NI ▼	LTS ▼	LTS ▼	LTS ▼
Wildfire	LTS	NI ▼	LTS ▼	LTS –	LTS ▼

Notes:
▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
– Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.
NI = No impact
LTS = Less-than-significant impact

As indicated in Table ES-2, Alternative 1, the No Project Alternative would result in the fewest environmental impacts and would be considered the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Of the alternatives evaluated, Alternative 4 was found to be the environmentally superior alternative because it would slightly reduce the potential for impacts in seven out of 14 (half) of the resource areas evaluated. Alternative also generally meets all of the project objectives.

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1 Introduction and Scope of the EIR

1.0 Purpose and Intended Use of this EIR

The City of Chico (City) has prepared this Draft Environmental Impact Report (Draft EIR) to inform the general public, the local community, responsible agencies, trustee agencies, and other interested public agencies, and the City's decision-making bodies (Planning Commission and City Council) regarding the potential significant environmental effects resulting from implementation of the Valley's Edge Specific Plan Project (VESP or proposed project), as well as feasible measures to mitigate those significant effects and alternatives to the proposed project. This Draft EIR was prepared in compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC], Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), and the City's procedures for implementing CEQA.

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that assesses the reasonably foreseeable environmental impacts of a proposed project, as well as identifies potentially feasible mitigation measures and alternatives to a proposed project that could reduce or avoid adverse environmental impacts.

1.1 Project Background and Overview

The proposed project includes a mix of residential, retail, and office land uses, and public/semi-public facilities, including an elementary school, parks, and open space. The project site is located in unincorporated Butte County within the City's Sphere of Influence (SOI). The City's General Plan identifies this area as the Doe Mill/Honey Run Special Planning Area (SPA) and assigns land uses designed to help meet the City's future housing and job needs. These areas are envisioned as connected and complete neighborhoods with a mix of housing types, services, employment, and shopping opportunities, along with parks and open space. The City is processing the application for the VESP and associated approvals, including annexation to the City, which must occur before any component of the project could be implemented.

Project Location

The project site is located within unincorporated Butte County and the City's SOI, adjacent to the southeast quadrant of the city at the transition of the valley floor and lower foothill region. Primary access to the project site is currently from Skyway and E. 20th Street with secondary access from Honey Run Road. State Route 99 is located roughly 1.25 miles to the east.

Project Description

The proposed project includes a mixed-use community with a range of housing types, commercial uses, parks, trails and recreation and open space areas. The residential component would consist of approximately 1,392 Multi-Generational or family housing residential units and 1,385 age-restricted (55+) residential units. The commercial portion includes approximately 56 acres designated for a mix of professional and medical offices, neighborhood retail shops and services, multi-family apartments, day care, and hospitality uses. Approximately 672 acres would be designated as parks, trails, open space and preservation, including a large regional park, a community park, neighborhood parks, mini parks and tot lots, and an active adult park.

1.2 Scope of the EIR

This EIR evaluates the proposed VESP to the extent feasible which includes establishing the existing environmental resources within the project site, analyzing potential impacts on those resources due to implementation of the proposed project, and identifying mitigation measures to reduce significant impacts. Where project specific information is available this EIR quantifies and/or evaluates project impacts at a level of detail commensurate with information available at the time the analysis was conducted.

Based on a review of the project and comments received during the Notice of Preparation (NOP) public review period (see Appendix A for a copy of the NOP and comments received), the City determined that an EIR should be prepared that addresses the following technical issue areas:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology, Water Quality, and Drainage
- Noise and Vibration
- Public Services and Recreation
- Public Utilities
- Transportation and Circulation
- Wildfire.

The specific technical issue areas or topics are described in each of the technical sections presented in Chapter 4. Land Use is not considered a technical issue and is addressed in Chapter 3.

The topics of agriculture and forestry resources, mineral resources, and population and housing are not addressed in Chapter 4 of the EIR because, as explained in the NOP, impacts in these areas would be less than significant or no impacts would occur. Therefore, these topics are not further evaluated in the EIR.

The Project Alternatives chapter of the EIR (Chapter 5, Project Alternatives) was prepared in accordance with Section 15126.6 of the CEQA Guidelines. CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where significant environmental impacts will not occur.

1.3 CEQA Process

Notice of Preparation

In accordance with CEQA Guidelines Section 15082, a NOP was circulated for public and agency review from August 14 through September 13, 2019, and a public scoping meeting was held on August 29,2019 (see Appendix A). The purpose of the NOP was to provide notification that an EIR for the proposed project was to be prepared and to solicit guidance on the scope and content of the document. A summary of the comments received on the NOP and at the scoping meeting is included in the Executive Summary, as well as in the Introduction of each technical section in Chapter 4.

Draft EIR and Public Review

This Draft EIR is being circulated for public review and comment for a period of 45 days pursuant to CEQA Guidelines Section 15105. The 45-day public review period for the Draft EIR will be from Friday, October 29, 2021 through Monday, December 13, 2021 . The public can review the Draft EIR at the following address during normal business hours (Monday through Friday, 8 a.m. to noon and 1 p.m. to 5 p.m.) or on the City's website at: https://chico.ca.us/valleys-edge-specific-plan.

City of Chico
Community Development Department
411 Main Street, 2nd Floor
Chico, California 95927

The City encourages all comments on the Draft EIR to be submitted in writing. All comments or questions regarding the Draft EIR should be addressed to:

City of Chico Community Development Department
Mike Sawley, Principal Planner
411 Main Street, P.O. Box 3420
Chico, California 95927
mike.sawley@chicoca.gov
530.879.6812

Final EIR

Upon completion of the Draft EIR public review period, a Final EIR will be prepared that will include written responses to all substantive comments received during the public review period on the adequacy of the Draft EIR. The Final EIR will also include the Mitigation Monitoring and Reporting Program (MMRP) prepared in accordance with PRC Section 21081.6. The Final EIR will address any revisions to the Draft EIR made in response to agency or public comments. The Draft EIR and Final EIR together will comprise the EIR for the proposed project. Before the City can approve the project, it must first certify that the EIR has been completed in compliance with CEQA, that the City Council has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the City. The City Council also would be required to adopt Findings of Fact, along with a Statement of Overriding Considerations if there are any significant and unavoidable impacts where no feasible mitigation is available to reduce the severity of the impact (see PRC Section 21081).

EIR Adequacy

The level of detail contained throughout this EIR is consistent with Section 15151 of the CEQA Guidelines, which states the following:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

CEQA Review of Later Projects

If it is determined that a later project is consistent with the Specific Plan and is within the scope of the EIR, further environmental review may not be necessary. Section 65457(a) of the California Government Code and Sections 15182(a) and 15183 of the CEQA Guidelines encourage streamlining and provide, among other things, that no EIR or negative declaration is required for any residential project undertaken in conformity with an adopted Specific Plan for which an EIR has been certified. Later projects will be reviewed in light of these streamlining provisions, the information in this EIR, and the standards set forth in Public Resources Code section 21166 to determine whether further environmental review is required.

1.4 Lead, Responsible and Trustee Agencies

Lead Agency

In accordance with CEQA Guidelines Sections 15050 and 15367, the City has been designated the "'lead agency," which is defined as the "public agency which has the principal responsibility for carrying out or disapproving a project." The lead agency is also responsible for determining the scope of the environmental analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to making a decision to approve a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the City.

Responsible Agencies

Responsible agencies are state and local public agencies, other than the lead agency, that have some authority to carry out or approve a project or that are required to approve a portion of the project or approve a permit for which a lead agency is preparing or has prepared an EIR or Initial Study/Negative Declaration (CEQA Guidelines Section 15813). The following agencies would potentially act as responsible agencies for the purposes of this project:

- Butte Local Agency Formation Commission
- Butte County Air Quality Management District
- Butte County Association of Governments
- Central Valley Regional Water Quality Control Board
- Central Valley Flood Protection Board
- California Department of Fish and Wildlife
- Caltrans – District 3
- Butte County Public Works

Trustee Agencies

Trustee agencies are designated public agencies with legal jurisdiction over natural resources that are held in trust for the people of California and that would be affected by a project, whether or not the agencies have authority to approve or implement the project (CEQA Guidelines Section 15386). The following agency was identified as a trustee agency with potential jurisdiction over the proposed project:

- California Department of Fish and Wildlife

1.5 Use of Previously Prepared Environmental Documentation

This Draft EIR relies in part on data, environmental evaluations, mitigation measures, and other components of EIRs and plans prepared by the City for areas within the project vicinity. These documents are listed here and used as source documents for this EIR. All documents are available for public review during normal business hours (Monday through Friday, 8 a.m. to noon and 1 p.m. to 5 p.m.) at the City of Chico Community Development Department, 411 Main Street, 2nd Floor, Chico, California, and on the City's website at http://www.chico.ca.us/planning_services/OtherPlanningDocumentsandReports.asp.

- City of Chico 2030 General Plan, adopted April 2011, last amended March 2017
- Draft and Final 2030 General Plan EIR, City of Chico General Plan (SCH No. 2008122038)
- City of Chico Land Use and Development Regulations, City of Chico, updated through 2020
- Chico Municipal Code, updated through July 2019
- 2020 City of Chico Climate Action Plan, 2011
- Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone Final Environmental Impact Report (SCH No. 2016062049), August 2018.

1.6 Organization of the Draft EIR

The Draft EIR is organized in the following chapters: Executive Summary, Introduction and Scope of the EIR, Project Description, Land Use, Environmental Impacts and Mitigation Measures (Setting, Impacts, and Mitigation Measures), Project Alternatives, CEQA Considerations, EIR Preparers, and Appendices.

Chapter ES, Executive Summary—Provides an overview of areas of known controversy and issues to be resolved and lists the project alternatives. This chapter also summarizes the elements of the proposed project and the environmental impacts that could result from implementation of the project and provides a table which lists impacts, describes proposed mitigation measures, and indicates the level of significance of impacts before and after mitigation.

Chapter 1, Introduction and Scope of the Draft EIR—Provides an introduction and overview of the EIR process and describes the intended use of the EIR and the review process.

Chapter 2, Project Description—Provides a detailed description of the proposed project, including its location, background information, project history, project objectives, and technical characteristics.

Chapter 3, Land Use —Addresses the land use and planning implications of the project and discusses consistency and compatibility with adopted land use policies. A general discussion of the project's consistency with applicable General Plan goals and policies is provided in this chapter.

Chapter 4, Environmental Impacts and Mitigation Measures—Describes the baseline environmental setting and provides an assessment of potential project impacts for each technical issue area. Each section is divided into four sub-sections: Introduction, Environmental Setting, Regulatory Background, and Impacts and Mitigation Measures (project-specific and cumulative).

Chapter 5, Project Alternatives—Describes and compares alternatives to the proposed project.

Chapter 6, CEQA Considerations—Provides information required by CEQA regarding impacts that would result from the proposed project, including a summary of cumulative impacts, including potential secondary impacts resulting from growth inducement, and significant irreversible changes to the environment.

Chapter 7, EIR Preparation—Lists report authors who provided technical assistance in the preparation and review of the EIR.

Appendices—Includes various documents and data that support the analysis presented in the Draft EIR.

2 Project Description

2.0 Introduction

The Valley's Edge Specific Plan (proposed project or VESP) consists of a specific plan application with the City of Chico (City) that would entail annexation and development of approximately 1,448 acres of land currently located in unincorporated Butte County (County), within the City's Sphere of Influence (SOI). The Chico 2030 General Plan identifies this area as one of five Special Planning Areas (SPAs), referred to as the 'Doe Mill/Honey Run SPA'. The City's General Plan designated the SPAs based on criteria such as proximity to services, land use compatibility and geologic features. These planned growth areas are to be developed as complete neighborhoods with a mix of housing, services, employment, parks, and open space designed to meet the City's future housing and employment needs. The General Plan also requires that a specific plan, planned development or other comprehensive plan be prepared for each SPA prior to its development.

As directed by the General Plan, the VESP proposes a mix of residential, commercial, public, parks and open space land uses. The City is processing the application for the Specific Plan and associated approvals and will be responsible for initiating annexation to the City, all of which must be approved before the Specific Plan can be developed.

2.1 Project Location

The proposed project site (project site or plan area) is located within unincorporated Butte County, adjacent to the southeast quadrant of the City at the transition of the valley floor and lower foothill region (see Figure 2-1, Vicinity Map). The project site is located approximately 1.25 miles east of State Route 99 and is generally bounded by the Steve Harrison Memorial Bike Path (Bike Path - formerly Potter Road) and undeveloped land and the recently approved Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone (Stonegate residential subdivision project) on the west, Honey Run Road and Skyway on the south, undeveloped land on the east, and E. 20th Street, Lazy S Lane and Stilson Canyon on the north, as shown on Figure 2-2, Project Location. The project site consists of six Assessor's Parcel Numbers (APNs): 018-390-005, 018-390-007, 017-210-005, 017-210-006, 017-240-023, and 017-260-119.

2.2 Existing Project Site Conditions

The plan area is identified in both the Butte County and the City of Chico General Plans as an area designated to accommodate residential and commercial growth. The site is primarily undeveloped land leased out on a seasonal basis for winter cattle grazing.

Topography of the project site includes rolling foothills and four westerly-flowing seasonal drainage courses. The site slopes downward from Doe Mill Ridge to the east and westward toward the valley floor. The elevation of the project site ranges from a high of 580 above mean sea level (amsl) at the northeast corner to a low of about 250 feet amsl near the southwest corner. Annual grassland, valley oak woodland, and blue oak-foothill pine are dispersed throughout the project site.

Three double-sided billboard structures are located on the project site along Skyway. Various 110 and 250 kilovolt (kV) overhead high voltage transmission lines are located on the property, two of which traverse north to south, and two of which traverse east to west, and portions of the transmission lines and towers are visible from both Skyway and Honey Run Road. Existing recreational improvements on the project site include a network of private mountain bike, hiking, and equestrian trails, and a private disc golf course. An area in the southwest portion of the site contains dilapidated barns, remnants of a former house foundation, and corrals. Throughout the project site there are numerous rock walls that were constructed during the late 19th century that were used for livestock barriers and also demarcated property boundaries. Two agricultural wells are also present on the project site.

Existing Zoning and General Plan Land Use Designations

The project site is identified in the Butte County General Plan 2030 as a planned growth area for which a specific plan would be prepared. Current County zoning is AG-20/SP, with urbanized development subject to a Specific Plan and required environmental analysis. The project site is identified in the Chico 2030 General Plan as Special Planning Area 5 (SPA-5), Doe Mill/Honey Run SPA. The City General Plan envisions a recreation oriented, mixed-use development offering a broad range of housing types and densities within SPA-5.

Adjacent Land Uses

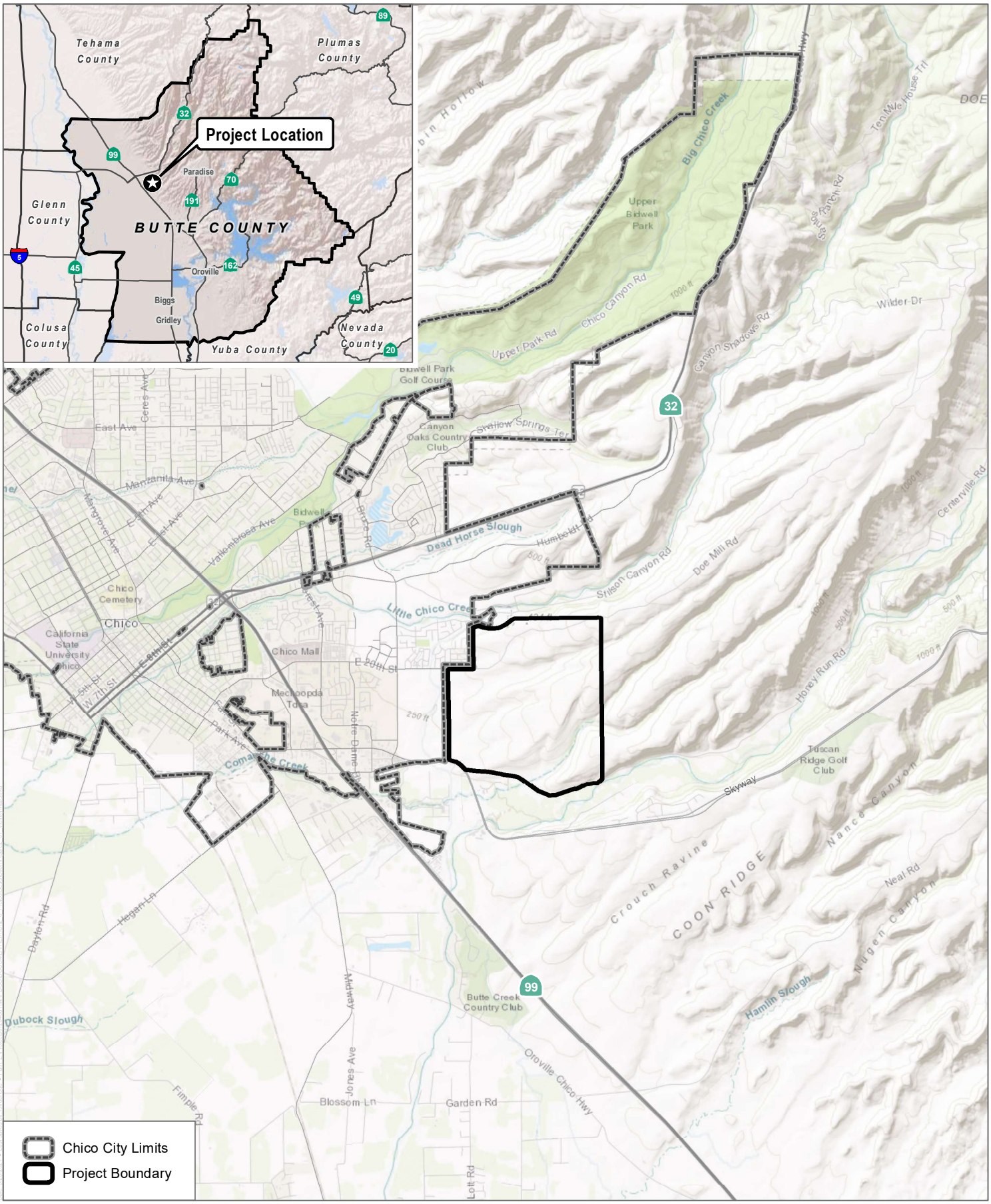
The northern boundary of the project site is characterized by gradual slopes atop an elevated plateau overlooking rural Stilson Canyon, a largely developed area comprised of estate lot single-family homes. The northwest corner of the project site abuts existing City of Chico single-family development. Land to the west is planned as an open space preserve associated with the recently approved Stonegate residential subdivision project. The Stonegate residential subdivision project would subdivide a 313-acre site into a combination of open space (137 acres), public right-of-way, parks (3.5 acres), single-family residential standard lots (423 units), multi-family residential (13.4 acres), and commercial uses (36.6 acres).

Land upslope of the entire eastern boundary of the project site is undeveloped, zoned AG-160 (160-acre minimum) by the County and has historically been used for winter cattle grazing.

Land uses south of Skyway include an asphalt production plant. The southeast boundary of the project site borders Honey Run Road. Land uses along the south side of Honey Run Road consist primarily of single-family homes on large parcels ranging from 1.6-acres to 15-acres, under the jurisdiction of Butte County. The Bike Path forms the western boundary of the project site.

Existing Roadways

Public roadways nearest to the project site include E. 20th Street and Dawncrest Drive to the northwest, Skyway at the southwestern corner, and Honey Run Road along the southern border. No roadways exist on the eastern border of the project site. There are no public or paved roads within the project site.



SOURCE: ESRI/OpenStreetMap 2019

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0 0.5 1 Miles

FIGURE 2-1

Vicinity Map

Valley's Edge Specific Plan Project

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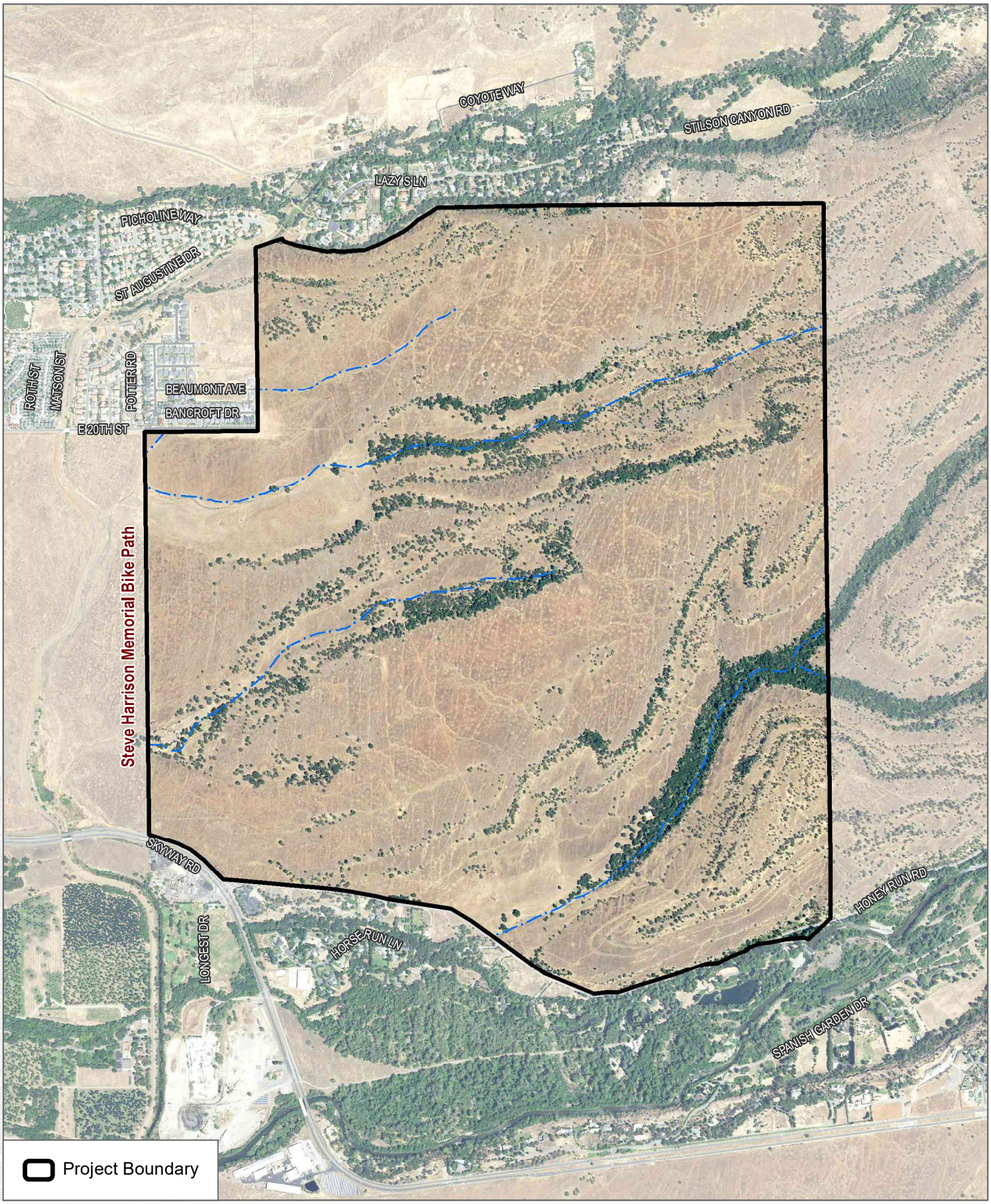

SOURCE: USDA 2016, USGS NHD 2018

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0 750 1,500 Feet

FIGURE 2-2

Project Location

Valley's Edge Specific Plan Project

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Existing Water and Sewer Infrastructure

Currently, there are two agricultural wells on the project site. There is no other water or sewer infrastructure on the project site.

The project would be served by the California Water Service Company (Cal Water Chico-Hamilton City District) and the City for domestic water and sanitary sewer services, respectively. Cal Water is the sole domestic water service provider in the City. The Cal Water Chico-Hamilton City District currently receives its water supply from a total of 65 groundwater wells (62 located in the City of Chico). Seven surface storage structures allow the District to store groundwater during periods of non-peak water demand. Cal Water's current delivery system includes over 355 miles of pipeline and six booster pumps. The system delivers approximately 27 million gallons of water per day.

The City collects residential, commercial, and industrial wastewater from its service area carried through a system of gravity sewer pipes, force mains, and lift stations to the City's Water Pollution Control Plant (WPCP). The City currently maintains approximately 266 miles of gravity sewer lines of varying widths, from 6-inch diameter up to 66-inch diameter, along with 15 lift stations and associated force mains. In 2011, the City expanded the treatment plant to its current effluent capacity of 12 million gallons per day (MGD) with the ability to expand to 15 MGD capacity in the future (California Natural Resource Agency 2015).

Existing Drainage

The plan area is located within the Butte Creek watershed and supports four westward-flowing intermittent/ seasonal drainage courses originating in the lower foothills east of the project site. The largest and only named drainage is Comanche Creek. The other three drainages are unnamed and eventually confluence off-site west of the Bike Path. Collectively, these four drainages convey runoff from a majority of the project site.

Public Services

The Butte County Sheriff's Office and the California Highway Patrol (CHP) currently serve the project site. The Butte County Fire Department (BCFD) and the California Department of Forestry and Fire Protection (CAL FIRE) provide fire protection. Through an established cooperative agreement, CAL FIRE and the BCFD function together as a fully consolidated fire protection agency.

2.3 Proposed Project Description

Project Objectives

California Environmental Quality Act (CEQA) Guidelines 15124(b) require that the Project Description include a statement of the objectives of the project. The objectives should describe the purpose of the project and are intended to assist the lead agency in developing a reasonable range of alternatives for consideration in the EIR.

The primary objective of the project is to implement the Chico General Plan vision and direction for the Doe Mill/Honey Run SPA. The City's General Plan includes the following policy direction specific to SPAs:

Goal LU-6: Comprehensively plan the Special Planning Areas to meet the City's housing and jobs needs.

> **Policy LU-6.1 (Special Planning Area Designation)** - To meet the City's growth needs, support development in the following five Special Planning Areas: Bell Muir, Barber Yard, Doe Mill/Honey Run, North Chico, South Entler.

Policy LU-6.2 (Special Planning Area Implementation) – Allow flexibility when planning the Special Planning Areas in order to meet changing community housing and jobs needs.

Action LU-6.2 (SPA Planning Requirements) – Require more detailed land use planning in the form of a specific plan, planned development, or other comprehensive plan for each Special Planning Area (SPA) prior to development occurring on vacant land within an SPA. In addition to the Actions specific to each SPA, subsequent land use planning shall:

- Create a parcel-specific land use plan based on site, infrastructure, and environmental analysis.
- Include public facility financing plans, infrastructure phasing plans, and other studies as applicable.
- Consider opportunities for the provision of housing units affordable to very low, low, and/or moderate income households within the SPA using governmental subsidies or other incentives.
- Include the range of uses identified on the SPA conceptual land use plan (a conceptual land use plan is not intended to direct specific acreage or organization of land uses, but is intended to depict the general mix of desired land uses within the project area).
- Have no significantly greater traffic, air quality, or noise impacts than those analyzed in the General Plan environmental analysis (residential and non-residential development assumptions for each SPA are provided in [General Plan] Appendix C).

The Chico General Plan states the following for the Doe Mill/Honey Run SPA:

> Planning for the Doe Mill/Honey Run SPA will result in a recreation oriented, mixed-use development offering a broad range of housing types and densities. The SPA will include a village core, retail along Skyway, a variety of residential densities (including very low, low, medium, and medium-high density), open space areas on the SPA's east side, a community park, neighborhood and pocket parks, public uses (potentially an elementary school site), and preserve areas with creekside corridors. Roadways, trails, and bikeways will be integrated into the natural landscape to connect the residential areas to parks, open space, offices, public facilities, and services.
>
> The village core will provide a mix of professional offices, neighborhood retail, and other services. The community park will be designed and programmed with the Chico Area Recreation and Park District to include a variety of recreational amenities. Open space areas will provide a buffer along the entire Stilson Canyon rim to the north and along Honey Run Road to the south, and will establish a permanent buffer against foothill encroachment to the east.
>
> Design standards will be developed for site planning, building design, and landscaping to minimize visual impacts and to address wildland fire considerations for this foothill development. Lighting standards will be developed to address dark sky concerns and visual impacts. Special consideration will be given to protecting and preserving sensitive habitats, including the many ephemeral streams that drain the site, as well as the wetland areas on the western edge. Site planning will consider and protect groundwater recharge areas.
>
> Key circulation links will be located at Skyway and E. 20th Street. (Chico 2017, Appendix C).

Specific project objectives are:

- Prepare a Specific Plan that is consistent with and implements the policy framework of the Chico 2030 General Plan, including direction provided for the Doe Mill/Honey Run SPA.
- Create a Specific Plan that is both beneficial to the community, and economically viable for development.
- Create a planned community with a village core to serve as the community's social, civic and economic hub.
- Provide housing that responds to demographic shifts, such as the need for senior housing, and replacement housing due to the Camp Fire.
- Promote healthy, livable and complete neighborhoods by providing community gathering places, parks, schools, open space/greenways, retail areas, shopping areas, employment areas, and pedestrian and bicycle trails.
- Promote outdoor recreation by creating space and facilities that foster play, exercise, adventure and social interaction.
- Use open space to preserve and protect sensitive cultural resources and biological resources, including natural drainages.
- Integrate natural landforms, features and open space corridors with the land use plan and project design.
- Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and both conventional and electric vehicles.
- Develop employment opportunities through construction, maintenance and operation of infrastructure, housing, commercial and public uses.

Proposed Land Uses

The VESP proposes up to 2,777 dwelling units, ranging from 0.54 dwelling unit per acre (du/ac) to 18.0 du/ac on approximately 668 acres. The VESP also allows for approximately 447,155 square feet (sf) of commercial development on approximately 56 acres. The remainder of the project site is proposed to be parks, open space, public facilities, and roadway infrastructure. Figure 2-3 illustrates proposed land uses within the project site and Table 2-1 shows a breakdown of each land use, along with the applicable zone. Each land use designation is described in more detail, below.

Table 2-1. Land Use Summary Table

Land Use	Applied Zoning Districts	Acres	Approximate Density/ Commercial Sf	Approximate Dwelling Units
Residential				
VLDR – Very Low Density Residential	RS-VE	46.3	0.54	25
LDR – Low Density Residential	R1-VE	188.3	1.7	342
LDR – Low Density Residential	R1-SF-VE	333.6	4.1	1,372[1]
MDR – Medium Density Residential	R2-VE	91.2	9.6	876[2]
MHDR – Medium-High Density Residential	R3-VE	9.0	18.0	162
	Subtotal/Average:	668.5	*4.1*	*2,777*

Table 2-1. Land Use Summary Table

Land Use	Applied Zoning Districts	Acres	Approximate Density/ Commercial Sf	Approximate Dwelling Units
Commercial and Office				
V-CORE – Village Core	CN-VE	12.6	77,000	—
C-COMM – Village Commercial	CC-VE	43.7	370,155	—
	Subtotal	*56.3*	*447,155*	—
Parks, Open Spaces and Public Uses				
V-PG - Public Quasi Public	PQ-VE	18.8	—	—
V-OS1 – Primary Open Space	OS1-VE	46.3	—	—
V-OS2 – Valley Open Space	OS2-VE	246.7	—	—
R-OS – Regional Open Space	OS2-VE	371.2	—	—
	Subtotal	*683*	—	—
Roads				
Project Roadways (Right-of-Way)	—	40.4	—	—
	Subtotal	*40.4*	—	—
	Total	**1,448.3**	**447,155**	**2,777**

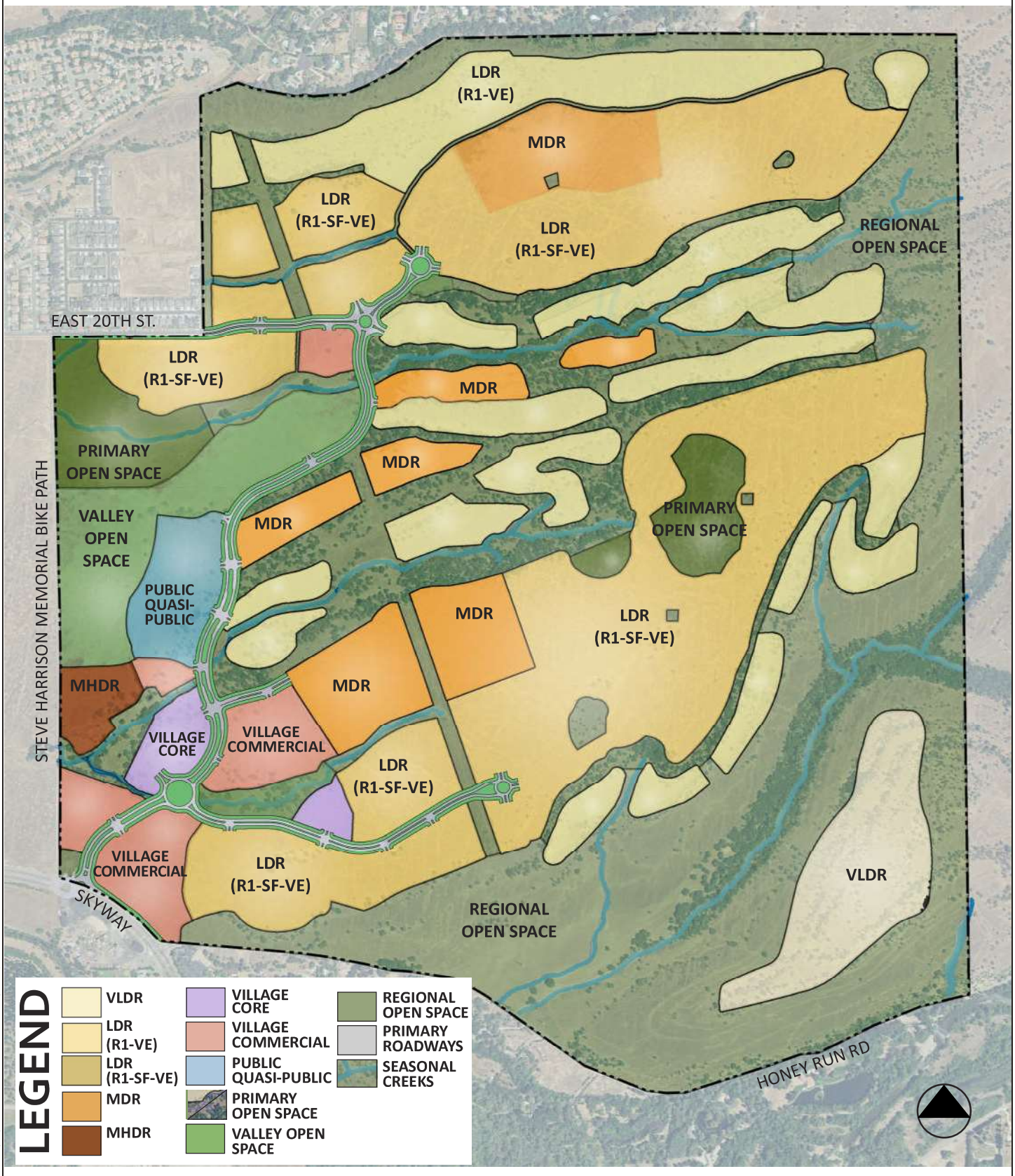
Source: VESP 2021.
Notes:
[1] Includes 865 age-restricted units.
[2] Includes 520 age-restricted units.

Residential

The residential component of the proposed project would comprise approximately 668 acres. A maximum of 2,777 residences could be built, of which, approximately 1,385 would be restricted to residents 55+ years of age and older. Based on the City's current average of 2.4 persons per household (PPH) for non-age-restricted households and 1.67 PPH for households with residents 55 years or older, the project is anticipated to provide housing for approximately 5,654 residents.

The " Multi-Generational Neighborhood" (or Family Housing) residential land use is intended to provide a broad range of densities (very low to medium high density) and housing types. These homes would not be age-restricted. The Family Housing residential component would create capacity for approximately 1,392 dwelling units, including estate lots for custom-built homes, single-family detached, single-family attached and multi-family dwelling units. Included within the Multi-Generational Neighborhood is workforce housing, which is designed to be affordable by providing housing types that are smaller in size and therefore are more affordable than typical single-family homes. Family Housing is proposed primarily in the northern portion of the project site along Stilson Canyon Ridge, including areas farther south in and around the Village Core. An additional residential area, referred to as "Equestrian Ridge", is located on a mesa in the southeast corner of the site, accessible only from Honey Run Road. Family residential development would comprise approximately 399-acres or about 30% of the total VESP area acreage at an overall average density of 3.5 dwelling units per acre.

The age-restricted 55+ "Senior Housing" would also include a range of densities (low to medium density) and is intended to be responsive to market demand and emerging trends in active adult and senior communities such as smaller attached and detached patio homes. The Senior Housing would be developed in the central/southern portion of the project site and would comprise approximately 269-acres or 20% of the VESP area at an average density of 5.1 dwelling units per acre. A total of 1,385 Senior Housing units are proposed.



SOURCE: City of Chico, 2020

FIGURE 2-3

Land Use Plan

Valley's Edge Specific Plan Project

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The residential land use designations are defined as:

VLDR (Very Low Density Residential - RS-VE)

The VLDR designation includes residential lots with a minimum parcel size of 20,000 sf. This designation is intended for individually owned, custom single-family detached homes that can be sited with consideration of slopes, oak trees, and other natural features. The VLDR land use category encompasses 46 acres of the VESP area. This area is referred to as Equestrian Ridge and is the only residential land accessible along Honey Run Road. The VLDR designation implements the City's RS zoning district and allows densities ranging from 0.2 to 2.0 units per acre. Building heights up to 35 feet would be allowed for housing units and between 15-feet and 25-feet for garages and accessory units.

LDR (Low Density Residential – R1-VE)

The LDR designation Is applied to areas appropriate for residential lotting on natural terrain with a minimum parcel size of 15,000 sf. Parcel sizing allows for home placement to be more responsive to site constraints, such as oak trees, slopes and terrain, and other natural features. Approximately 188 acres are designated LDR. The lot size range serve Chico's demand for individually owned, custom built single-family detached homes. Buildings in the northern portion would be limited to 35 feet in height or two stories. Buildings along Stilson Canyon would be limited to 26 feet in height within the first 45-feet from the northern private lot property line. This LDR designation implements portions of the City's R1-15 zoning district and allows 1.4 to 2.5 units per acre.

LDR (Low Density Residential – R1-SF-VE)

This LDR designation allows for low density housing on graded lots with a minimum lot size of 4,000 sf (3,500 sf for small lot subdivisions). These lots would include detached, single-family, one-story and two-story homes. The acreage for this land use designation includes approximately 333 acres. Building heights would be limited to 35-feet. This LDR designation implements the City's R1 zoning district and allows densities ranging from 2.1 to 7.5 units per acre.

MDR (Medium Density Residential – R2-VE)

The MDR designation allows minimum parcel sizes of 3,300 square feet. The MDR designation is intended to accommodate different layouts, such as traditional small lotting layout, courtyard homes, condominiums, town homes, and cottage developments such as detached and attached cottages and patio homes. Lot sizes would typically be smaller than LDR, which would allow for greater density. Approximately 91 acres are designated MDR. Minimum lot size would be 3,300. This designation implements the City's R2 zoning district, accommodating densities ranging from 6 to 14 units per acre for detached homes, and up to 20 units per acre for cottage developments. Building heights would be limited to 35 feet or two stories.

MHDR (Medium-High Density Residential – R3-VE)

No minimum parcel size is required for the MDHR designated areas. The MHDR designation is applied to select areas where higher-density residential uses, such as multi-family apartments benefit from close proximity to the Village Core, elementary school, and community park. The MHDR land uses would occupy approximately 9 acres. The MHDR designation implements the City's R3 zoning district, accommodating densities ranging from 14.1 to 22 units per acre. Building heights would be limited to 45 feet for primary units and 25-feet for accessory units.

Accessory Dwelling Units

Accessory Dwelling Units (ADU) are second units on residential lots. ADUs would be permitted in compliance with State law.

Commercial

Commercial land uses within the Specific Plan area would comprise approximately 56 acres, and would be segmented into two types; Village Core (V-Core) and Village Commercial (V-Comm). The Village Core designation would occupy approximately 13 acres, and the Village Commercial designation would be 44 acres. A total of 447,155 square feet (sf) of commercial space could be developed. For purposes of the EIR analysis, it is assumed that 39,000 sf would be retail uses, 272,155 sf would be general office uses and 136,000 sf would be medical office uses. A project-wide community clubhouse, as well as a clubhouse to serve the age-restricted component of the project would account for the remaining 24,000 sf. Commercial areas would be accessible from both the Class I Path system and Neighborhood Electric Vehicle lanes.

The Village Core land use designation is intended to serve both residents of and visitors to the plan area. Land uses anticipated within the Village Core include professional and medical services, neighborhood retail shops and services, food and beverage, a community clubhouse with swimming pool and other recreational facilities, a community garden, water features, and public gathering places, such as a bandstand and amphitheater. The Village Core designation would also allow social and recreational clubhouse amenities as part of the Village Core Park (see Figure 2-4). (For a complete list of uses that would be allowed within this designation, please see Appendix C of the VESP). Up to 77,000 sf could be developed within the Village Core. Building heights would be limited to 35 feet for the main buildings and 25-feet for any accessory buildings.

The Village Commercial designation would provide greater latitude on building size and scale, including a horizontal mix of uses. Land uses within this designation include medical and professional offices, multifamily housing (e.g., apartments), day care, hospitality, residential care homes, assisted living facilities, and retail uses. (For a complete list of uses that would be allowed within this designation, please see Section 4.5.3 of the VESP). Up to approximately 370,155 sf could be developed in the Village Commercial area. Building heights within 100 feet of the Bike Path or within 25-feet of an abutting R zone would be limited to 25 feet and buildings located more than 100 feet from the Bike Path would be limited to 45 feet in height.

Parks, Recreation and Open Space

A primary focus of the proposed project is the integration of active and passive recreational opportunities with residential development throughout the project site. Sensitive species habitat and certain cultural resources would also be preserved in open space. The proposed project would designate approximately 672 acres for parks, preserves, and open space. A network of pedestrian and bike trails would also be constructed for public use. The Parks Master Plan identifies the location of key park and open space elements (see Figure 2-5). Table 2-2 provides a summary of proposed Park and Open Space components, followed by a summary of each type of park or open space.

Table 2-2. Park and Open Space Components

Park Types	Acreage (approximate)
Regional Park	371.2
Linear Parks, Creekside Greenways, and Open Space Corridors	178.6
Community Park	36.4
Neighborhood Parks (Homestead Park, Child's Meadows and Pioneer Park)	16.0
Mini-Parks and Tot Lots	2.9
Big Meadows Park	17.8
Village Core Park	3.2
Senior Parks	2.9
Primary Open Space	46.3
Total	**675.3 acres**

Source: VESP 2021.

Regional Open Space

Approximately 371.2 acres of the project site would be designated Regional Open Space (R-OS) and established as a Regional Park for conservation and passive recreation. Most of the Regional Park would remain in its existing natural condition. The proposed Regional Park would also serve as a buffer along Stilson Canyon to the north, Honey Run Road to the south, and the grazing lands and foothills to the east. Recreational uses within the Regional Park may include wildlife observation, mountain biking, hiking, cross country running, disc golf, and horseback riding and other activities. Access to the Regional Park would be provided by several trailhead connections from on-site open space corridors and along internal roadways.

Linear Parks, Creekside Greenways and Open Space Corridors

Approximately 179 acres of linear parks, creekside greenways and open space corridors are proposed within the project site. These elements would establish an internal bike and pedestrian trail system, connecting the Bike Path on the project's western boundary to the Regional Park on the project's eastern boundary.

Community Park

A 36.4-acre Community Park is proposed in the western portion of the project site near the proposed elementary school. The Community Park would be planned and programmed with the Chico Area Recreation and Park District (CARD) to include a variety of recreational amenities, such as bicycle/pedestrian trails, sports fields, community center, playground(s), dog park, a court play area, picnic areas, concessions, and restrooms.

Neighborhood Parks

Three neighborhood parks (Homestead Park, Child's Meadow Park and Pioneer Park), totaling approximately 16 acres, are proposed within the Multi-Generational Neighborhood areas of the project site. Neighborhood parks would be embedded within the larger open space framework, as described below and would generally include playgrounds, picnic areas, multi-use hard courts, and other active and passive recreational amenities.

Homestead Park (approximately 1.1 acres) is proposed along the extension of E. 20th Street to serve the northern portion of the project site. The upper portion of the park is planned for playgrounds, picnic areas, turf areas and multi-purpose hard courts. The lower portions of the park slope down through the oak woodlands, creating opportunities for integrated play structures. Surrounding land uses would be open space and low density residential.

Child's Meadows Park (approximately 7 acres) is proposed toward the center of the project site, east of the Village Core. Amenities would include picnic areas, playground equipment, and a multi-purpose hard court. Surrounding land uses would include open space, low density, and medium density residential uses.

Pioneer Park (approximately 6.5 acres) is proposed at the main roundabout off the Skyway entry. This park would include active and passive uses. Surrounding land uses would include commercial areas along the parks northern boundary, with commercial and low-density residential areas to the east and south.

Mini-Parks and Tot Lots

Approximately 2.9 acres of mini-parks and tot lots are proposed within the project site to provide close access to residents. These parks would typically be 0.25 acre or less, and final locations of the parks would be determined at the subdivision design stage of the project. Park amenities generally would include small turf areas with shade trees, fitness and play structures, bench seating, play sculptures and shade structures.

Big Meadows Park

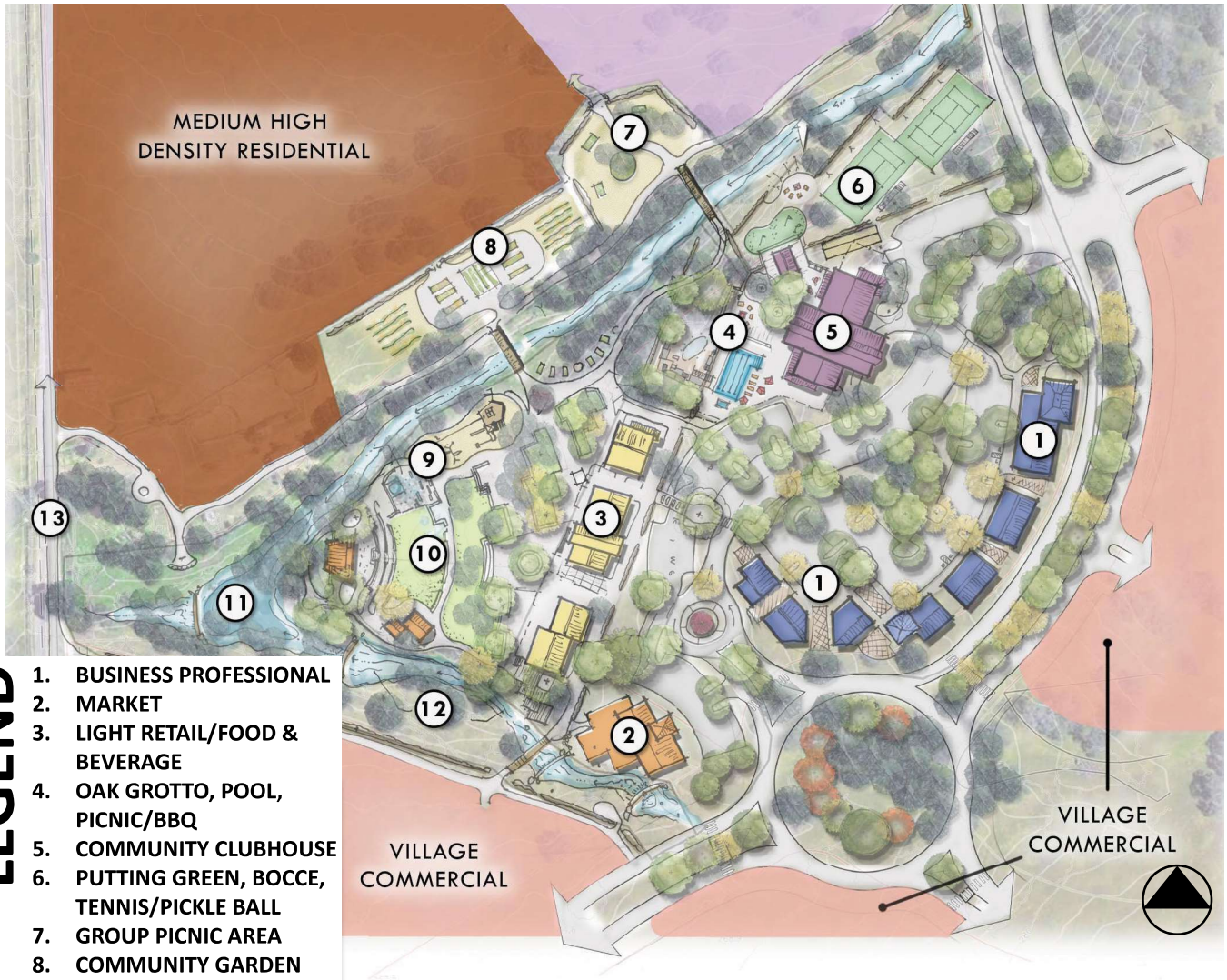
Big Meadows Park (17.8 acres) is proposed immediately north of the community park, near the western boundary of the project site. Big Meadows Park would include Class I trails, and if feasible, a lake for viewing and fishing stations, adventure play areas, picnic tables, shaded rest areas, restrooms, parking areas, and interpretive signage. Big Meadows Park could also include a monument honoring the Mechoopda Tribe's history and heritage in Chico and easterly foothills.

Village Core Park

Village Core Park (3.16 acres) is proposed directly west of the Village Core. Village Core Park is intended to be a pedestrian-oriented public gathering area centered around an outdoor amphitheater, and would include community gardens, playground(s), picnic tables, and passive recreation elements. Village Core Park would be served by connections to both the Bike Path as well as the proposed on-site trails network. Surrounding land uses would include multi-family housing, retail and mixed-use commercial.

Senior Parks

Approximately 2.9 acres of senior and active adult parks are proposed within the project site to provide senior residents with opportunities for social gathering, exercise, organized recreation, and other outdoor experiences in close proximity to their homes. Final locations of the parks would be determined at the subdivision design stage of the project and may be integrated into a future recreation center



LEGEND

1. BUSINESS PROFESSIONAL
2. MARKET
3. LIGHT RETAIL/FOOD & BEVERAGE
4. OAK GROTTO, POOL, PICNIC/BBQ
5. COMMUNITY CLUBHOUSE
6. PUTTING GREEN, BOCCE, TENNIS/PICKLE BALL
7. GROUP PICNIC AREA
8. COMMUNITY GARDEN
9. PLAYGROUND & WATER PLAY
10. BANDSTAND & GATHERING SPACE
11. POND
12. WATER FEATURE
13. STEVE HARRISON MEMORIAL BIKE PATH

SOURCE: City of Chico, 2020

FIGURE 2-4

Village Core Park

Valley's Edge Specific Plan Project

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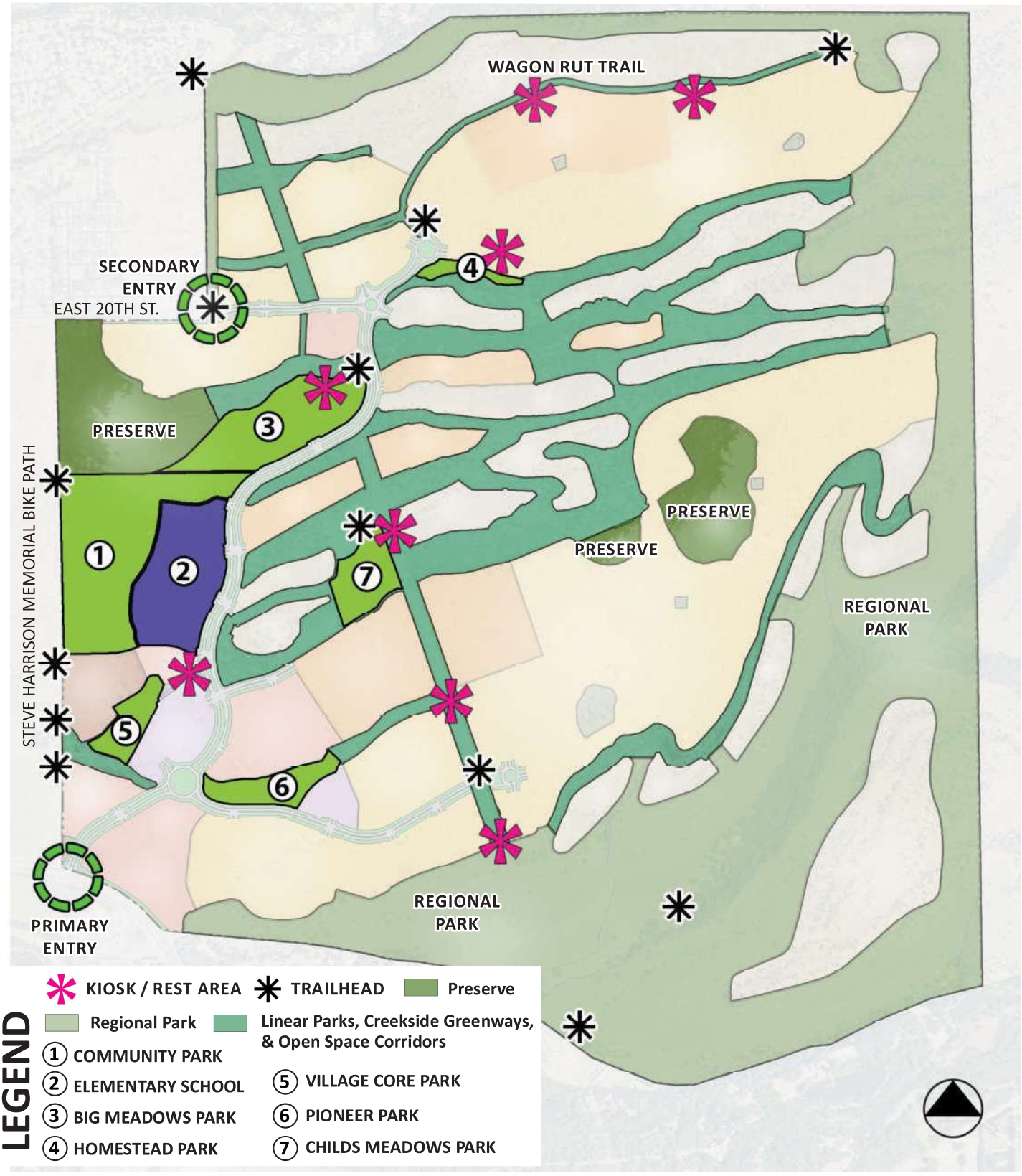

SOURCE: City of Chico, 2020

FIGURE 2-5

Parks Master Plan / Open Space

Valley's Edge Specific Plan Project

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Primary Open Space

Approximately 46 acres would be designated Primary Open Space (V-OS1) with the intention of avoiding impacts to environmentally sensitive habitat, on-site jurisdictional wetland features, and/or for listed or sensitive species, such as Butte County Meadowfoam.

Circulation

The proposed project would include a coordinated circulation system that provides for efficient vehicular travel, public transit, bikeways, pedestrian pathways, and sufficient space for emergency access and evacuation, as shown on Figure 2-6.

Vehicular Circulation

The proposed Circulation Master Plan depicted in Figure 2-6 provides an overview of the major collector road(s) together with more conceptual distribution of minor and local roads to support the proposed project. Primary vehicular access would be provided from Skyway with secondary access provided from E. 20th Street. The main north-south collector street would serve as the spine connecting primary and secondary entrances to the project site. Three roundabouts are proposed at major intersections along this major north-south collector. Local streets would provide direct access to individual properties that are typically constructed as in-tract improvements for each of the neighborhoods. The local streets would be designed to discourage through-traffic and promote slower speeds than collectors.

Collector streets would generally have two to four travel lanes, bike/Neighborhood Electric Vehicle (NEV) lanes, separated sidewalks, parkways or Low Impact Development (LID) swales, and landscape medians. Typical local streets in the Low Density Residential areas would have two travel lanes, on-street parking and a sidewalk on at least one side. In Very Low Density Residential areas local streets would consist of two travel lanes, curb and gutter and a separated sidewalk on one side. Roundabouts would have a pedestrian crossing on each leg of the intersection and landscaped interiors.

Neighborhood Electric Vehicle (NEV) Routes

NEVs would be accommodated on any interior roadway with a speed limit of 35 miles per hour or lower. The Specific Plan proposes Class II on-street routes that are designed to accommodate both NEV and bicycle use on collector streets. These routes would be used internally to connect the residential areas to the village core.

Bicycle Routes

Bicycle circulation would include both on- and off-street pathways and lanes. Striped on-street bikeways (Class II) would be provided on all major roadways throughout the plan area. Class I, off-street bike paths and trails, would be provided throughout the project site, primarily in open space areas (see Trails Master Plan discussion).

Trails Master Plan

The proposed Trails Master Plan, depicted on Figure 2-7, identifies approximately 20 to 25 miles of trails defined in five basic trail types; Class I Paths, Class II Lanes, Paseo Trails, Enhanced Trails, and Nature Trails. Approximately five and a half miles of paved Class I looped pathways are proposed. These trails would connect parks and open space corridors with residential areas, commercial areas and the Village Core. Class I bike

and pedestrian trails are intended for year-round use as both transportation and recreational corridors. There are approximately 2 miles of Class II Lanes. There is approximately 1 mile of Paseo Trails that would provide pedestrian and bicycle connections between development areas and the VESP open space trail network. There are approximately 4 miles of Enhanced Trails, improved with hardened natural surfaces such as gravel or decomposed granite, designed to promote recreation while providing connectivity to the Class I network. Lastly, approximately 12 miles of Nature Trails are proposed. These trails include pre-existing trails and are designed to emphasize recreation and are not a primary means of transportation. Informational kiosks would be placed at key locations to facilitate wayfinding and educate trail users on their surroundings.

The proposed Trail System would be managed (includes planning, design, construction, maintenance and management) by the master homeowners association, or sub-committee thereof.

Public Transit

To facilitate access to transit, bus stops would be included at the Village Core and elementary school site, and community park to be installed concurrent with initial collector street improvements. However, the final design and locations of bus stops would be determined in coordination with BCAG. In addition, a park and ride lot would be located within the community park, for commuters and carpoolers. A future connection to the community park could also be provided by Chico Unified School District (CUSD), as part of an after-school program for children.

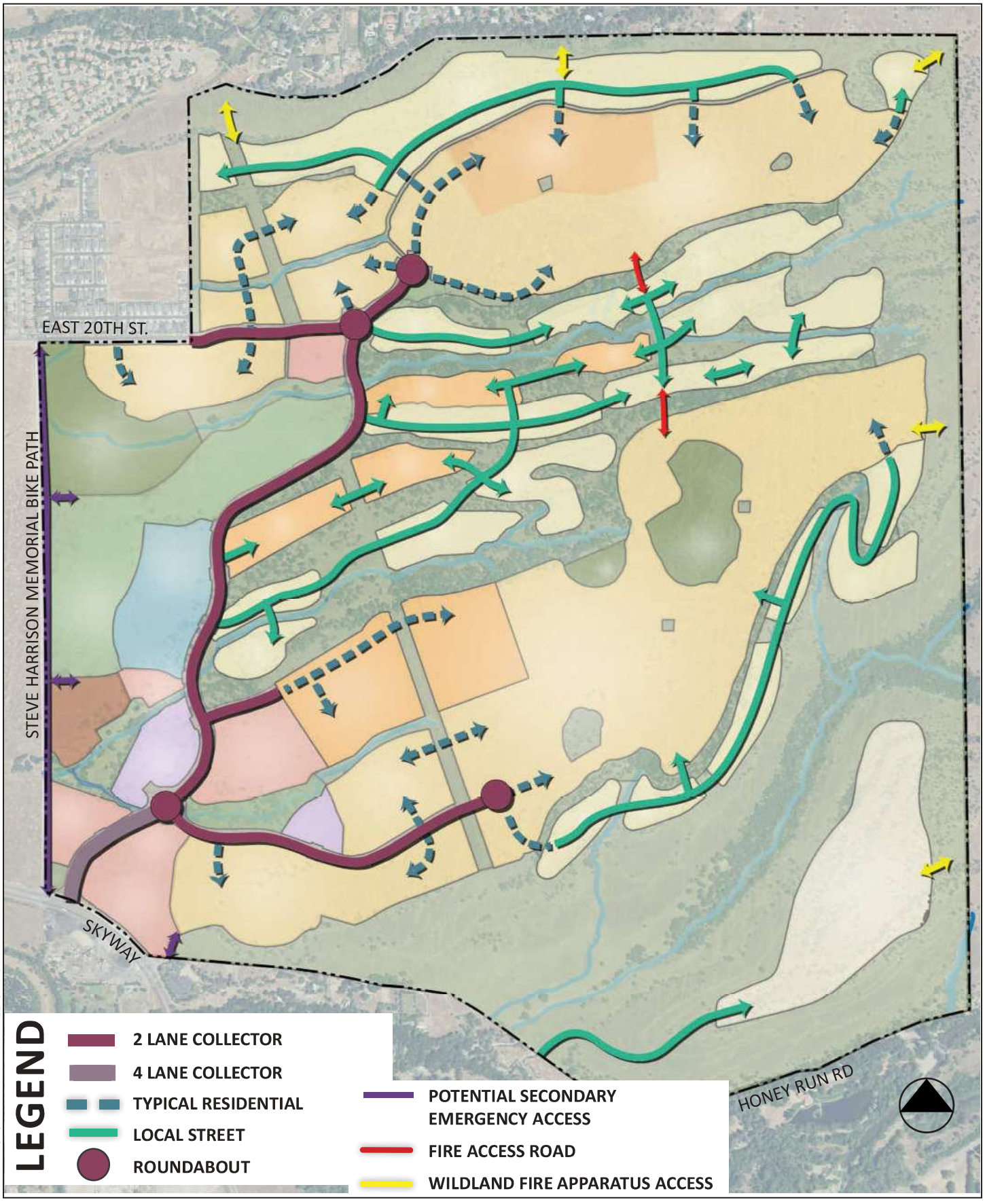
Public Services and Utilities

Following annexation, the City of Chico would provide most of the public services and utilities needed for project development. Utilities necessary to serve the proposed project include water, wastewater and storm drainage, as well as dry utilities such as gas, electric, telephone and cable. Public services supporting residents and businesses would include park, school, fire protection, police, and solid waste disposal. It is assumed new development would be “all-electric” consistent with the VESP Land Use action LU-2.2.

Water

The California Water Company (Cal Water) is the sole water provider in the City of Chico. Cal Water would provide water service to Valley’s Edge through two connections to their existing facilities. The proposed on-site water lines would connect to the existing facilities along the project’s western boundary at the present terminus of E. 20th Street, and through a main-line extension from the primary entry west along Skyway to a point near Bruce Road. Depending on the sequencing of phased development within the project area, the initial connection(s) may be at either location. The incremental design and installation of water infrastructure would ultimately result in a fully looped system, as depicted in Figure 2-8.

A one-million-gallon permanent water tank would also be required and would be constructed in one of two higher elevation locations near the eastern boundary of the project site. The proposed project would not use any reclaimed water for irrigation, due to lack of access to existing or planned infrastructure in the project vicinity. Two agricultural wells that exist on the property may be used as a source of water for irrigation and/or water related amenities, including pond features as a source for fire protection.



SOURCE: City of Chico, 2020

FIGURE 2-6

Vehicle Master Plan

Valley's Edge Specific Plan Project

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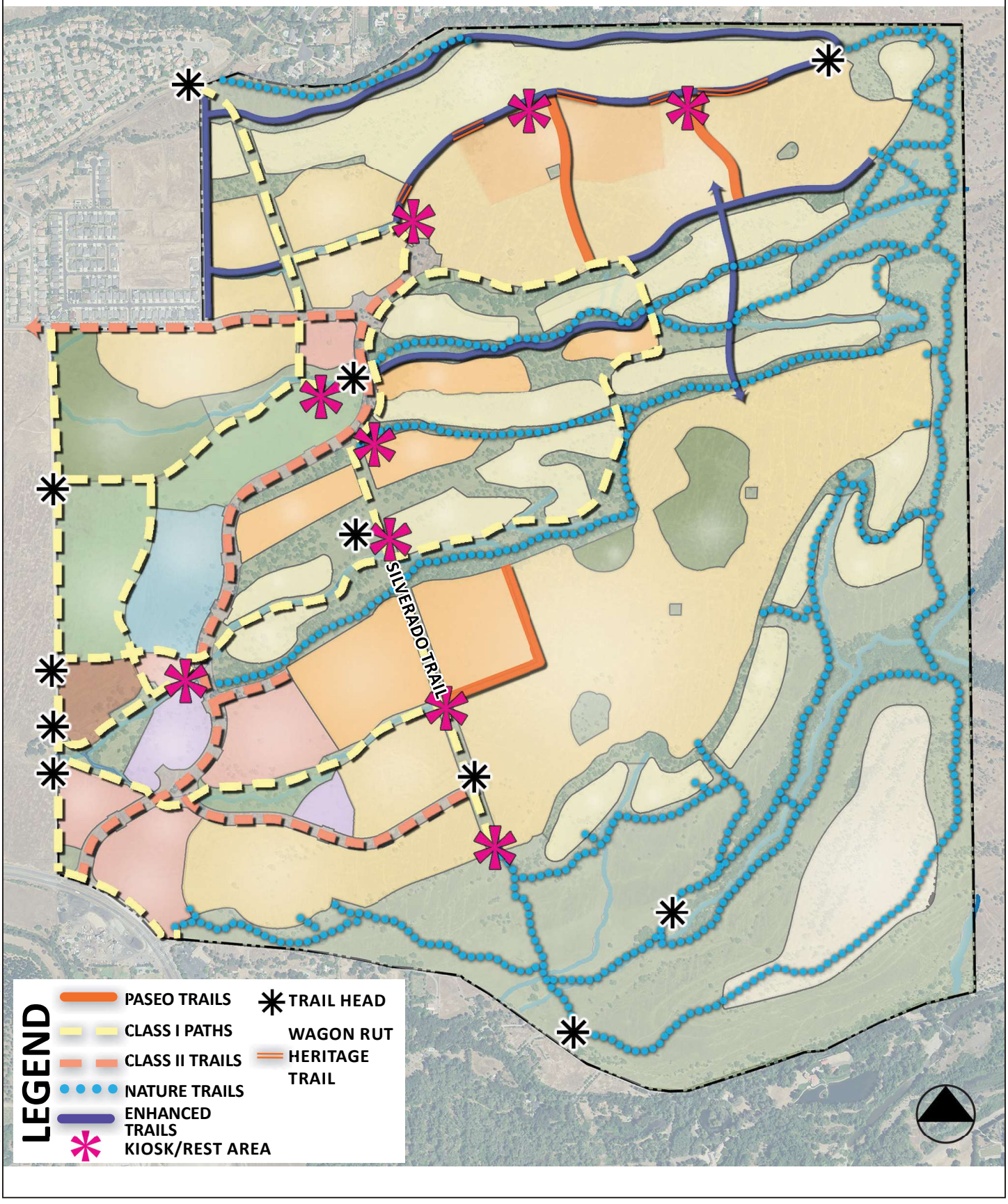

SOURCE: City of Chico, 2020

FIGURE 2-7

Trails Master Plan

Valley's Edge Specific Plan Project

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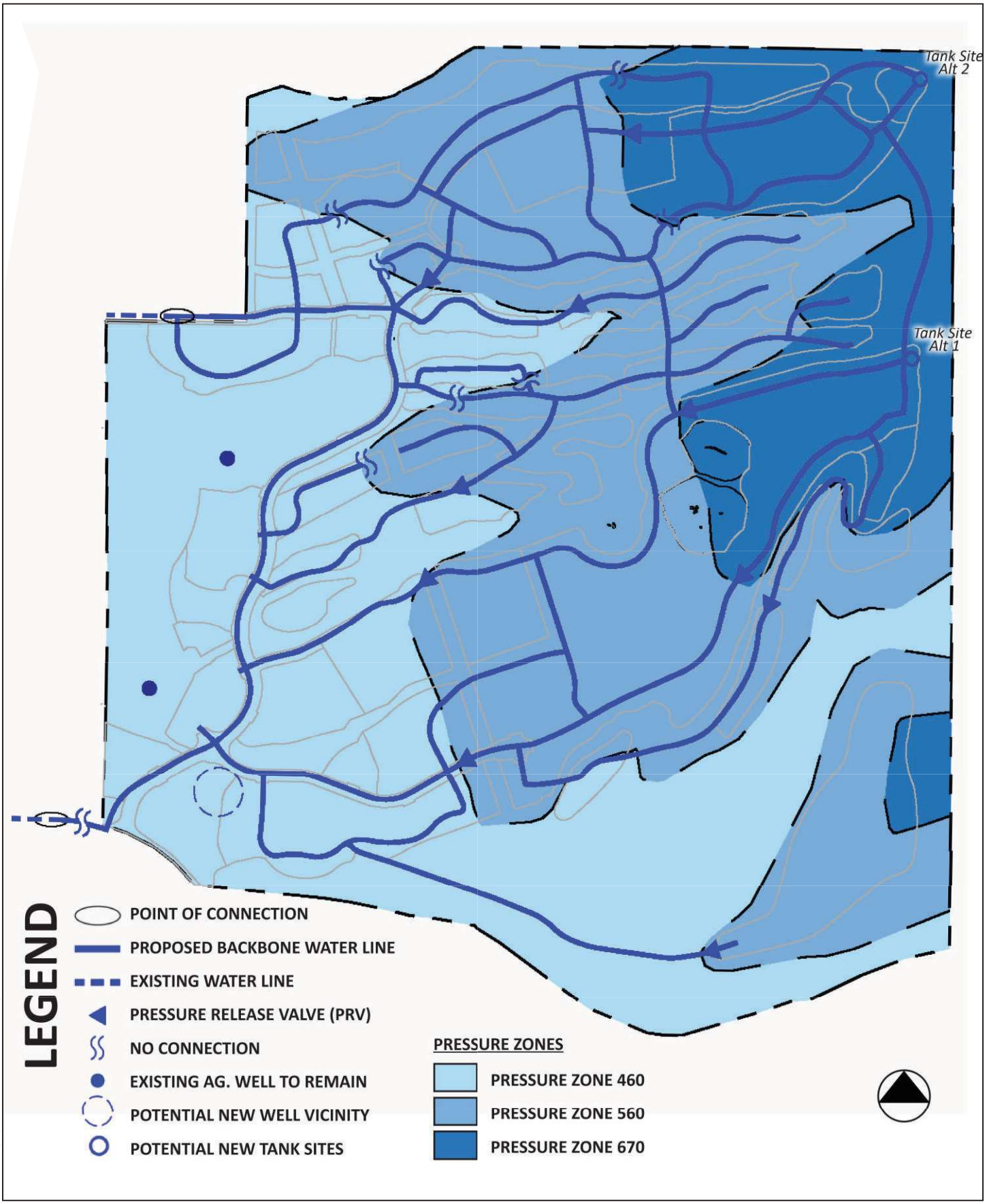

SOURCE: City of Chico, 2020

FIGURE 2-8

Water System

Valley's Edge Specific Plan Project

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Wastewater

Wastewater would be treated at the City's Water Pollution Control Plant (WPCP) located approximately four miles southwest of the City. As anticipated in the City of Chico's 2013 Sanitary Sewer Master Plan Update (SSMPU), two points of connection to Chico's existing sewer system would be required for the proposed project. Connections would be located on the north side of the project site at Bruce Road and E. 20th Street, and where the existing sewer terminates in Skyway west of the southerly entry to the project site, as depicted in Figure 2-9. The sewer line connection on E. 20th Street to Bruce Road is a distance of approximately 3,960 lineal feet. The southern connection generally serving the southern portion of the project site would tie into the City's "Honey Run Trunk Sewer" near Skyway and Bruce Road.

The proposed project's sewer network would be comprised primarily of 8-inch to 12-inch sewer mains, designed in a manner responsive to site topography. In instances where gravity fed sewer lines are not practical or economical, subject to Public Works approval, lift stations and associated force mains may be utilized. Similarly, in order to avoid excessively deep hard rock trenching, subject to Public Works approval, siphons system(s) may be used. Private residential sewer pumps may also be utilized to manage topographic and/or geological constraints. Such systems would connect to gravity-fed sewer lines and/or force main sewers.

Drainage

The proposed project's drainage system would involve a combination of conventional surface and subsurface drainage systems, including underground pipe conveyances, drainage and detention basins, bio-swales, outfalls, existing natural swales, and seasonal creeks. All drainage system improvements would be designed and constructed pursuant to City of Chico standards, subject to approval by the Director of Public Works-Engineering. The preliminary backbone storm drainage features, culverts, detention basin, and conveyances are depicted in Figure 2-10.

Design considerations for stormwater collection and conveyance would vary depending on the intensity of land use, slope, geology, proximity to natural drainage courses and other factors. Drainage in very-low density residential areas would rely predominantly on open swales and also low impact development (LID) for conveyance, treatment, and infiltration, while more densely developed areas would rely more on underground pipes. All stormwater from developed areas would be treated before being discharged into jurisdictional creeks.

The proposed project would be designed in compliance with all applicable stormwater regulatory requirements, including water quality. In accordance with both City and state requirements, the proposed drainage system would include series of on-site detention basins sized to attenuate post-project peak flow rates for storms up to the 100-year, 24-hour event, with the principle goal of providing significant local attenuation (at the basin outlet) of the sub-shed's peak discharge. On-site detention features would employ Best Management Practices (BMPs) and LID methods to slow water, filter out containments, and encourage infiltration and evapotranspiration. On-site detention may also occur in-channel by way of downsizing culverts to purposefully restrict flows to match desired downstream release rates. LID design concepts may include the implementation of techniques such as limiting the amount of hardscape, amended soil, rain garden (or bioretention cell to treat polluted runoff from a parking lot, for example), disconnected roof drain, tree planting, native vegetation preservation, and natural drainage flow. Solutions such as porous pavement and reduced hardscape aim to maximize infiltration and slow runoff, the application of which would, as with other techniques, be conditioned upon appropriate geological conditions.

Public Schools

The City of Chico Unified School District (CUSD) would provide public school services for the proposed project. An approximately 10-acre site for an elementary school would be designated within the 19 acres planned for Public Quasi Public (V-PQ) use. The school site is adjacent to the proposed Community Park site, which would provide shared use opportunities with the play fields and parking. Middle and high school students would attend schools outside of the project site.

Police and Fire Protection

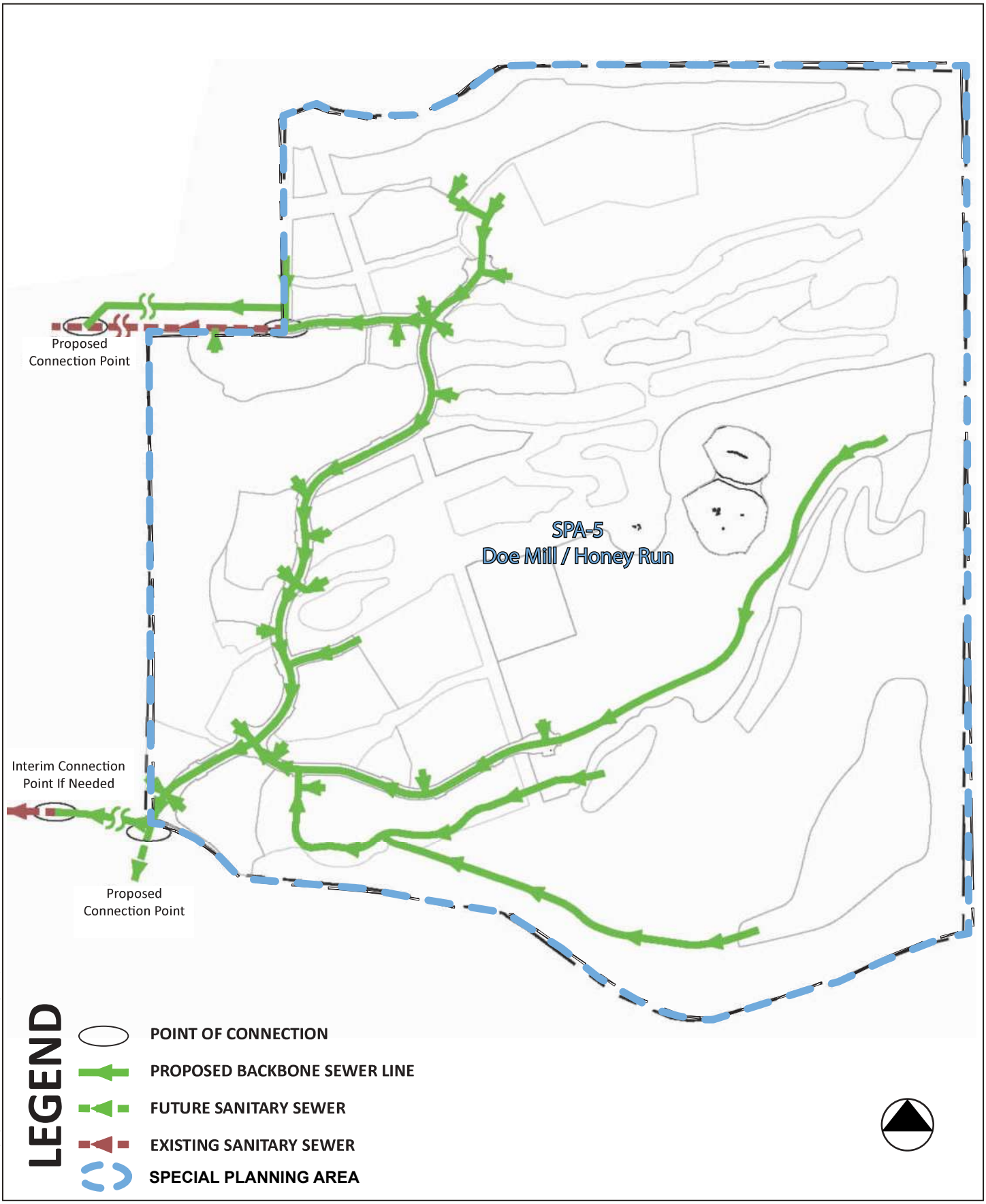
Law enforcement services would be provided by the City of Chico Police Department, located four miles from the VESP area at 1460 Humboldt Road, Chico. No police facilities are proposed within the VESP area.

The City of Chico Fire department would provide fire protection and emergency response services for the Specific Plan area. The nearest fire station is Fire Station 4, located at 2405 Notre Dame Boulevard near Highway 99 and Skyway. Primary access for emergency vehicles would be the entries on Skyway and E. 20th Street with additional secondary access provided off Honey Run Road. No new fire stations are proposed within the VESP area. All residences and commercial buildings would include sprinklers in the event of an interior fire.

Off-site Improvements

Pursuant to the City's 2013 SSMPU and subsequent engineering analysis, off-site improvements required to serve the project and other nearby areas include construction of approximately 3.5 miles of sewer lines to connect to the City's sewer system. These sewer extensions are shown on Figure 2-11. Required connections include replacing the existing 10-inch sewer line with a 15-inch line from Bruce Road along E. 20th Street to the project site (Doe Mill Trunk replacement); an 18-inch sewer line from the southwest corner of the project site along Skyway to Morrow Lane, south on an easement down Cramer Lane, west on a former railroad right-of-way, crossing under Highway 99 and connecting to a new 24-inch sewer line along Entler Avenue to Midway then heading northwest ultimately connecting to existing infrastructure at Hegan Lane. Portions of this southerly City sewer trunk line may be constructed by others, or the extension may be necessitated by development in the Specific Plan area. Conditions on any tentative subdivision map for development within the VESP would require subsequent approval of engineered drawings for the required infrastructure and construction of approved designs prior to recording the final map.

The project also includes a roundabout on Skyway adjacent to the project's main entrance. The roundabout would be two lanes and would be constructed within the existing roadway right-of-way. The roundabout would include a landscaped center island with a welcome to the City of Chico sign visible to westbound travelers on Skyway and possibly an art feature.



SOURCE: City of Chico, 2020

FIGURE 2-9

Sewer Infrastructure

Valley's Edge Specific Plan Project

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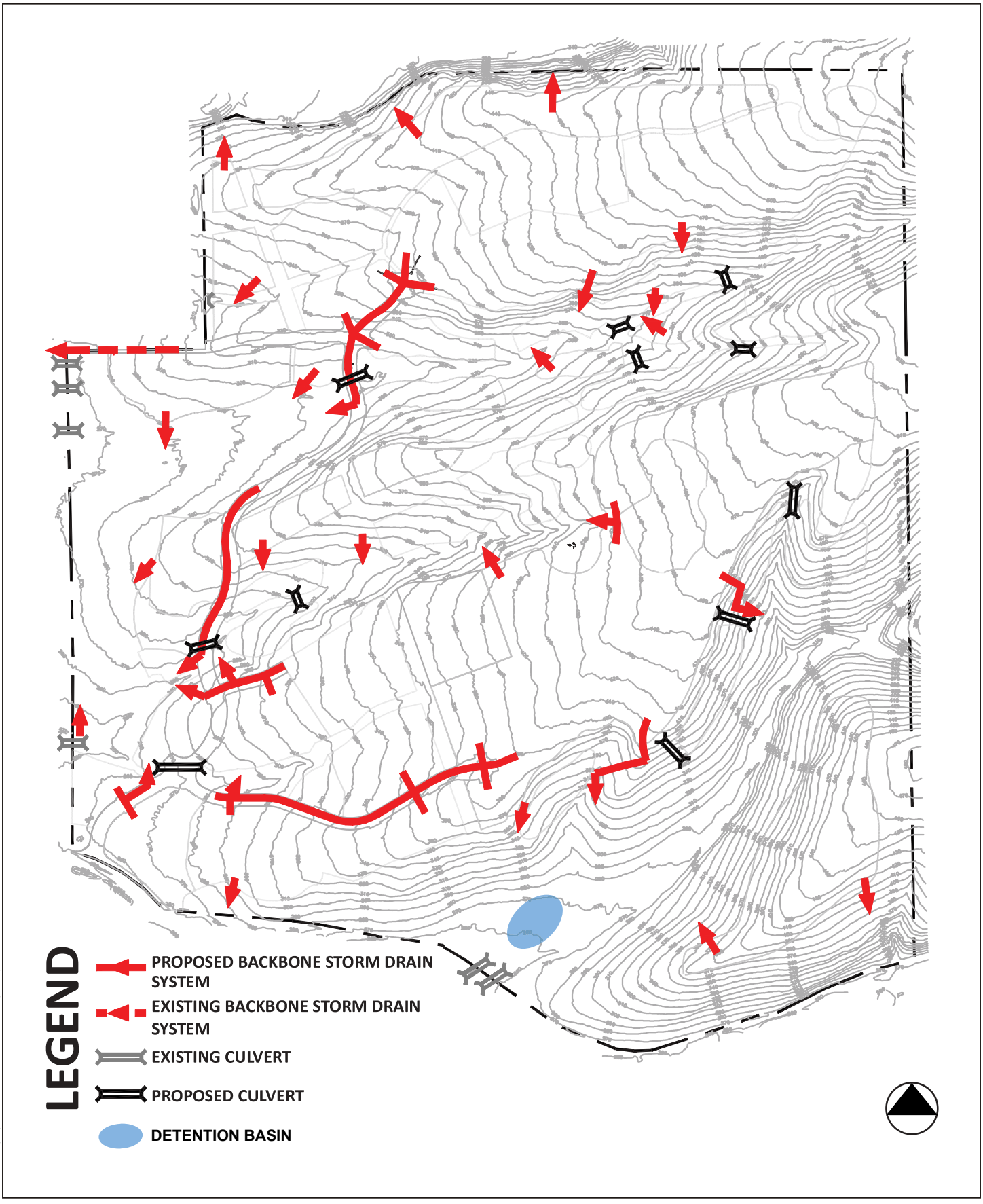

SOURCE: City of Chico, 2020

FIGURE 2-10

Drainage System

Valley's Edge Specific Plan Project

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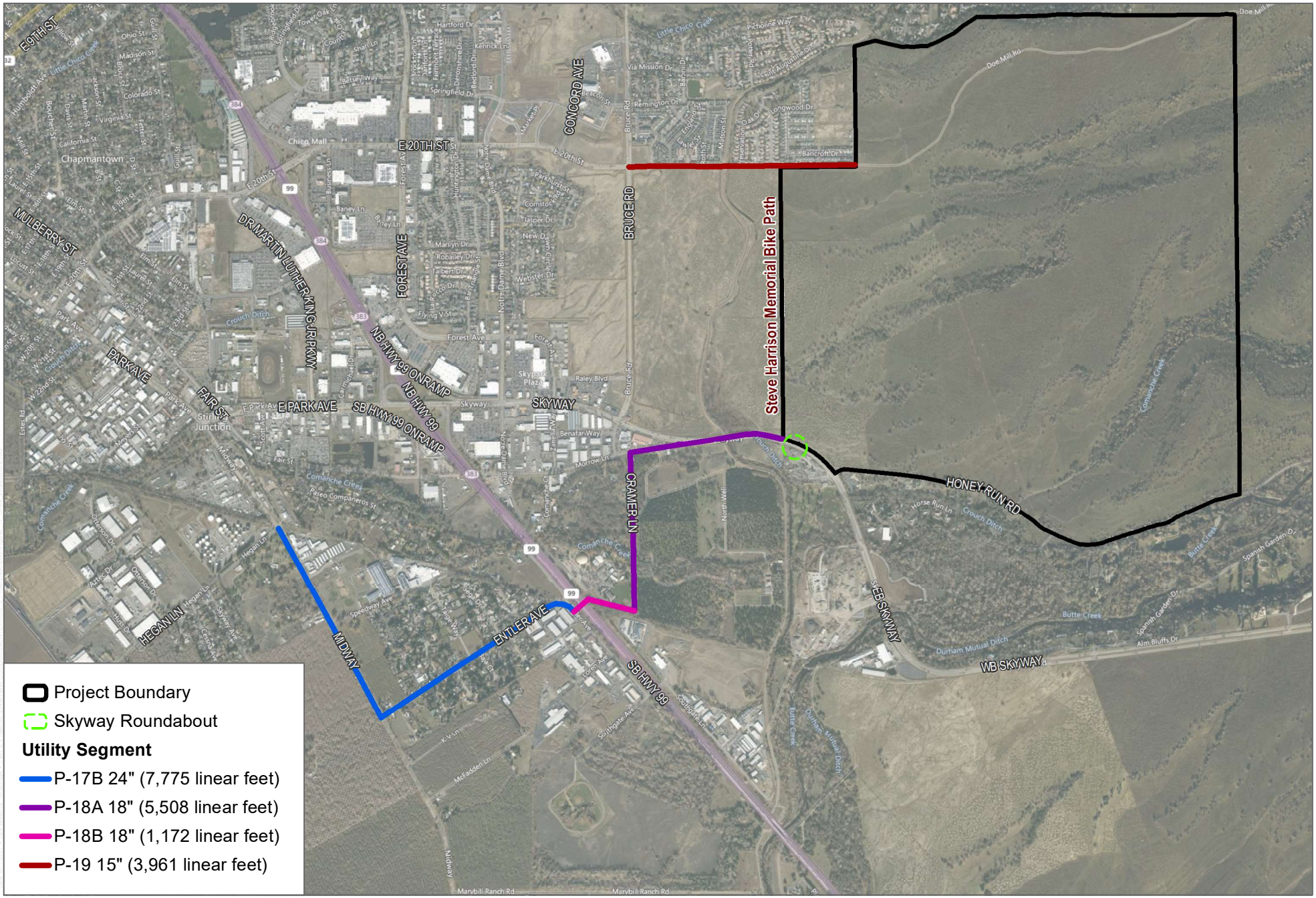

SOURCE: Bing 2020, Butte County 2019

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0 1,125 2,250 Feet

FIGURE 2-11

Off-site Infrastructure

Valley's Edge Specific Plan Project

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Other Specific Plan Components

The proposed project includes adoption of the VESP and its appendices. The VESP addresses a wide range of issues pertinent to the development of the project site. In addition to the land use designations, allowable uses, circulation system, utilities and services described above, the VESP includes guiding principles, goals and actions (Chapter 2 of the VESP), development standards (incorporated into VESP Chapter 4, Land Use Plan), administration and implementation phasing plan (VESP Chapter 7), and Design Guidelines (VESP Appendix A). The EIR analysis of the VESP takes into consideration the full Specific Plan, including provisions included within these chapters.

Rock Walls

Throughout the project site there are numerous rock walls that were constructed during the late 19th century that functioned as livestock barriers, enclosures and also demarcated property boundaries. The VESP includes goals and implementation actions designed to document, protect, preserve and maintain the integrity of the walls. Appendix D of the VESP includes more specific information pertaining to the rock walls.

Wildfires

The proposed project would include natural open space interspersed with development in the wildland-urban interface area (WUI). Section 4.5 in Chapter 4 of the VESP, Firewise Guidelines, Standards and Vegetation Management Requirements, addresses fire concerns within the WUI. Firewise Guidelines are provided for adequate access, building materials, vegetation management and use of fire resistant design for all lots and homes that abut the WUI perimeter areas, and responsibilities of individual homeowners and the Homeowners Association to minimize wildfire risks. Open space trails would also be designed to function as fire-breaks throughout the project site.

Oak Woodland Mitigation and Management Plan

The VESP includes an Oak Woodland Mitigation and Management Plan (VESP Appendix E) with goals and measures designed to protect the on-site oak woodland habitat present throughout the site. The project's roadway system has been designed to minimize the removal of trees and to incorporate existing trees within medians and as street trees. Appendix E of the VESP includes more specifics of the measures to protect on-site trees.

Development Standards & Design Guidelines

The layout and design of project development would be guided by development standards and design guidelines. Development standards, which are considered mandatory, are provided for each land use designation in Tables 4.6 through 4.12 of VESP Chapter 4. The development standards address, among other items, minimum lot area, lot dimensions, setbacks, height limits, and parking standards. Design guidelines for each land use are provided in Appendix A of the VESP. Areas that are addressed include, but are not limited to, hillside development, grading, signage, public landscaping, lighting, fencing, walls, and architectural style, including mass, form and scale. Design guidelines are typically more flexible than development standards.

Development Agreement

It is expected that the project Applicant and the City will enter into a Development Agreement in accordance with Government Code Section 65864 and Chico Municipal Code Chapter 19.32. The Valley's Edge Development Agreement will, among other things: (1) outline roles and responsibilities for the orderly development and conservation of the VESP planning area; (2) articulate EIR mitigation responsibilities and timing related to environmental impacts; and (3) resolve the fair-share funding by future Developer(s) of needed facilities and other infrastructure required to serve the plan area.

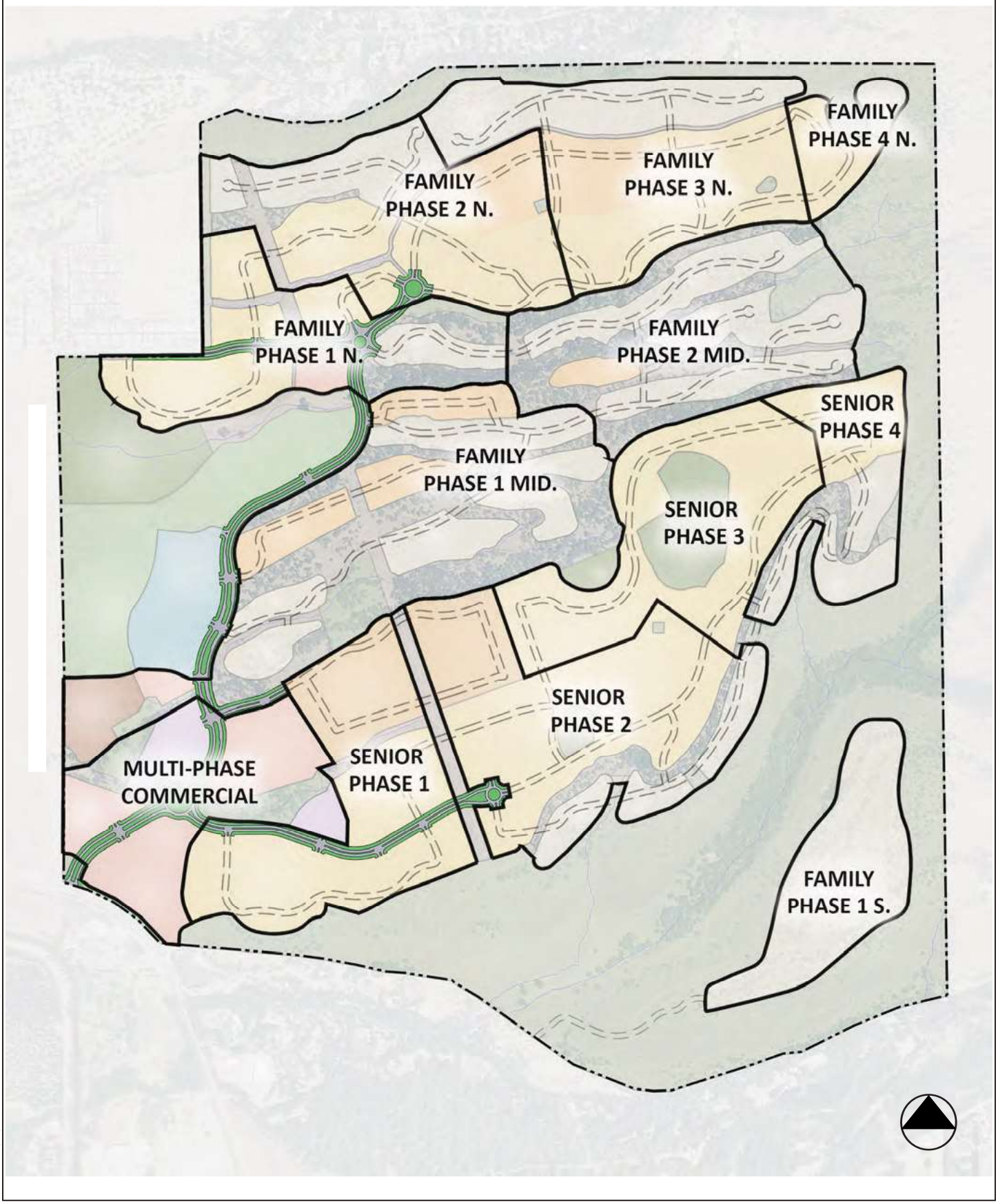
Components of the Development Agreement may include but are not limited to such things as the term of vested development rights, triggers and thresholds for phasing and installation of on-site and off-site infrastructure, provisions for affordable housing, procedures for architectural design review, and the timing for installation of bike/pedestrian trails, neighborhood parks, fire breaks and other physical improvements. The Development Agreement may describe conditions for the dedication of land for public purposes, specifically a Community Park and Elementary School site along with commensurate in-lieu impact fee credits. The Development Agreement may also describe provisions for maintenance of public and private infrastructure and improvements, including areas dedicated as environmental preserves.

Project Construction/Phasing

The VESP is expected to develop incrementally, generally from west to east. Figure 2-12 depicts the anticipated general progression of development phases over time. The VESP does not require development to occur in any particular sequence, so it may not occur in the numerical order depicted in the figure. However, infrastructure (roadways, sewers, utilities and other improvements necessary to serve development areas) must be constructed to serve each project phase. For example, Phase 3 may precede Phase 2 if circumstances warrant, but all infrastructure necessary to support Phase 3 must be in place or constructed concurrently with that phase. Phasing of the major collector and the minor internal roads lying between north and south areas would be determined by traffic circulation, secondary emergency access, and on- and off-site infrastructure capacity.

2.4 Required Approvals

This Draft EIR serves as the primary environmental document for all future discretionary actions associated with development of the VESP. The City will review subsequent discretionary proposals for consistency with this EIR and determine if the request is consistent. In general, if it is determined that a subsequent project is consistent with the Specific Plan and is within the scope of the EIR, further environmental review will not be necessary. Section 65457(a) of the California Government Code and section 15182(a) of the CEQA Guidelines provide that no additional environmental review is required for any residential project undertaken in conformity with an adopted Specific Plan for which an EIR has been certified. If it is determined that a development application is inconsistent with the Specific Plan and/or substantial evidence exists that supports the occurrence of any of the events set forth in section 21166 of the Public Resources Code (PRC) and section 15183 of the CEQA Guidelines, a determination will be made as to the appropriate subsequent environmental document.



SOURCE: City of Chico, 2020

FIGURE 2-12

Construction Phases

Valley's Edge Specific Plan Project

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The federal, state, regional and local agencies that may have jurisdiction over aspects of the proposed project may require certain permits and approvals that include, but are not necessarily limited to the following:

City of Chico

The following actions would be taken by the City if the VESP is approved:

- Certification of the Valley's Edge Specific Plan EIR
- Approval of the Mitigation Monitoring and Reporting Program
- Specific Plan Adoption
- Pre-zoning

Subsequent Approvals

Subsequent projects within the VESP may require one or more of the following additional approvals from the City:

- Development Agreement (may be concurrent with VESP adoption)
- Tentative Subdivision Maps (one may be concurrent with VESP adoption)
- Community Service/Facilities Districts formations
- Conditional Use Permits
- Design Review for commercial and multifamily projects
- Tree Removal Permit
- Grading Permits
- Building Permits

Other Agencies

Subsequent development within the VESP area may be required to obtain approvals from other agencies, depending on the location and nature of each project phase. Responsible and trustee agencies are State and local public agencies that have some discretion over the proposed project or have jurisdiction over resources held in public trust that could be affected by the proposed project. Responsible agencies and trustee agencies must rely upon this EIR when considering discretionary project approvals. The potential responsible and trustee agencies, as well as federal agencies with potential jurisdiction, and their discretionary permits or actions include and are not necessarily limited to:

- Butte County Local Agency Formation Commission (LAFCo), annexation of the project site to the City of Chico
- U.S. Army Corps of Engineers, Clean Water Act Section 404 Permit
- Central Valley Regional Water Quality Control Board, Clean Water Act Section 401 Water Quality Certification and Section 402 National Pollutant Discharge Elimination System Permit
- California Department of Fish and Wildlife, Section 1602 Lake or Streambed Alteration Agreement and Section 2081 Incidental Take Permit
- U.S. Fish and Wildlife Service, Endangered Species Act Section 7 Biological Opinion and Incidental Take Permit
- CALFIRE, Fire Protection Development Standards
- State Historic Preservation Office – Section 106 Consultation

2.5 References

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City of Chico. 2017. Chico 2030 General Plan, Adopted April 2011, last amended March 2017.

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3 Land Use and Planning

3.0 Introduction

This chapter of the Draft EIR describes existing and planned land uses within and adjacent to the Valley's Edge Specific Plan (VESP or proposed project) area (or project site/plan area), current land uses, land use designations, zoning, and analyzes the consistency of the proposed project with existing land use plans and policies and identifies any potential conflicts with applicable plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect. In addition, Specific Plans must be consistent with the adopted General Plan (Gov. Code, §§ 65454).

CEQA Guidelines Section 15125(d) provides that the environmental setting of an EIR must discuss "any inconsistencies between the proposed project and applicable general plans and regional plans. Such regional plans include, but are not limited to, the applicable air quality attainment or maintenance plan or State Implementation Plan, area-wide waste treatment and water quality control plans, regional transportation plans, regional housing allocation plans…." Potential inconsistencies between the proposed project and planning documents specific to a particular environmental issue area, such as air quality or greenhouse gases, are addressed in that section of this EIR. The reader is referred to the various technical sections in Chapter 4 for a discussion of any potential physical/environmental effects and potential incompatibilities that may be considered in the determination of physical environmental impacts. This chapter addresses potential land use inconsistencies with the City of Chico 2030 General Plan, Butte County LAFCO polices and other applicable plans.

As noted in Chapter 2, Project Description, the layout and design of project development would be guided by development standards and design guidelines included as part of the Specific Plan. The VESP proposes to develop its own development standards and design guidelines consistent with the City's Land Use and Development Regulations (Title 19). Development standards, which are considered mandatory, are provided for each land use designation and address, among other items, minimum lot area, lot dimensions, setbacks, height limits, and parking standards. Design guidelines include, but are not limited to, hillside development, grading, signage, public landscaping, lighting, fencing, walls, and architectural style, including mass, form and scale.

While an increase in population resulting from new development does not necessarily cause direct adverse physical environmental effects, indirect physical environmental effects such as increased vehicle trips and associated increases in air pollutant emissions and noise could occur. The information in this chapter is used as a basis for the analysis of project impacts in the technical sections contained in Chapter 4 of this Draft EIR.

Comments received in response to the Notice of Preparation (NOP) included a concern that the City's General Plan and General Plan EIR is legally inadequate due to the change in baseline conditions attributed to the Camp Fire and the increased demand for housing, including affordable housing (see Appendix A for the NOP and comments on the NOP). The comment asked whether the City is planning to update its General Plan. Another comment questions if the adjacent Meriam Park project which includes up to 3,200 residential units and 250,000 square feet (sf) of commercial uses along with the VESP can accommodate the increase in demand for housing as a result of the Camp Fire. Another comment questions if these projects would threaten the viability of downtown.

In response to these concerns, the City is currently not planning on updating its General Plan to address issues associated with the Camp Fire. The City has approved a substantial number of multi-family and single-family housing units to accommodate an increased demand for new housing. The City recently approved the Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone project (Stonegate residential subdivision project), located just west of the project site, which includes 469 single family units and 233 multi-family units. According to the City's development activity map provided on the City's website, as of January 2019 there are 1,254 approved multi-family units and 1,174 single-family units included within approved tentative maps (not including Meriam Park) in the city. In response to concerns regarding affordable housing, the VESP includes Action LU-1.1 that promotes a variety of housing types and affordability levels to help meet the City's housing needs including aging populations and residents permanently displaced by the Camp Fire. The VESP includes neighborhood serving retail uses that would not adversely affect the economic viability of existing retail and commercial establishments in downtown Chico, as discussed in Chapter 5.

Other comments from Butte County requested the project include setbacks along the northern and eastern boundaries to minimize potential conflicts between the proposed development and grazing lands. The County's Zoning Ordinance requires a 300-foot setback be provided (Division 7, Agricultural Buffers, Butte County 2018). As shown on Figure 2-3 in Chapter 2, Project Description, the proposed project includes a 150–foot setback along the northern boundary adjacent to unincorporated areas of Stilson Canyon and a 300-foot setback along the eastern boundary.

Information for this chapter was primarily obtained from the City of Chico 2030 General Plan and EIR (EIR SCH No. 2008122038; last amended March 2017), the City of Chico 2014-2022 Housing Element (adopted June 2014), the City of Chico Land Use and Development Regulations, Butte County 2016 Regional Transportation Plan Sustainable Communities Strategy 2016-2040 (adopted December 2016), and the Butte County LAFCO Policies and Procedures (adopted May 6, 2010).

3.1 Existing Setting

The project site is approximately 1,448 acres located within the northwestern portion of unincorporated Butte County, adjacent to the southeast quadrant of the City of Chico (City). The site is primarily undeveloped and characterized as annual grassland with areas of blue oak foothill pine woodland and valley foothill riparian woodland. The topography of the site ranges from about 550 to 580 feet above mean sea level (amsl) at the northeast corner to about 250 feet amsl near the southwest corner. Butte Creek borders the southern edge of the project site and Little Chico Creek borders the northern edge along with ephemeral drainages that traverse the project site on a roughly northeast to southwest orientation. Along the northern border of the site near Stilson Canyon there are some steep slopes consisting of rock outcrop cliffs with 50 to 70% slopes.

Present on the site are three double-sided billboard structures located generally in the southern portion, various overhead high voltage transmission lines traversing north to south, and east to west; private recreational amenities including a network of mountain bike, hiking, and equestrian trails, and a disc golf course. There is an area in the southwest portion of the site that contains dilapidated barns, remnants of a former farmhouse foundation, fences and corrals. Throughout the project site there are numerous rock walls that were constructed during the late 19th century that were used for livestock barriers and also demarcated property boundaries. Two agricultural wells are also present on the site. There are no public or paved roads or water, sewer or storm drain infrastructure within the project site. The site has historically been used for seasonal grazing.

Surrounding Land Uses

To the north of the project site is rural Stilson Canyon, a largely developed area comprised of estate lot single-family homes in unincorporated Butte County. The northwest corner of the project site abuts single-family development in the city. The western portion of the site is bounded by the Steve Harrison Memorial Bike Path (Bike Path). The recently approved Stonegate residential subdivision project is located on the west side of the Bike Path. The Stonegate residential subdivision project includes a mix of single-family residential, multi-family residential, commercial uses, parks, open space, and public right-of-way. The Meriam Park project, which includes a mix of residential and commercial uses, is currently under construction northwest of the project site, on the north side of E. 20th Street and west side of Bruce Road. Lands farther to the east, within the County, are undeveloped and have historically been used for grazing. The southern portion of the site is bordered by Skyway and Honey Run Road. Land uses along Skyway include an asphalt production plant, a small solar array, and other small light industrial uses and undeveloped parcels. Land uses along the south side of Honey Run Road consist primarily of single-family homes on large parcels ranging from 1.6-acres to 15-acres, within the County.

City of Chico 2030 General Plan Land Use Designations

The project site is identified in the Butte County General Plan 2030 as a planned growth area for which a specific plan would be prepared. The project site is located in the City's Sphere of Influence (SOI) and identified in the City's 2030 General Plan as a Special Planning Area 5 (SPA-5) or the Doe Mill/Honey Run SPA. The City's General Plan assigned a conceptual mix of residential, commercial, parks and open space uses within this area. The land uses assigned to the project site in the General Plan are listed below (City of Chico 2017).

Very Low Density Residential (VLDR) - This designation can provide a smooth transition between the rural areas and more densely developed neighborhoods, or be in "pockets" of development in carefully selected locations.

Low Density Residential (LDR) - This designation represents the traditional single-family neighborhood with a majority of single-family detached homes and some duplexes. This is the predominant land use category of the City's existing neighborhoods.

Medium Density Residential (MDR) - This designation is generally characterized by duplexes, small apartment complexes, single-family attached homes such as town homes and condominiums, and single-family detached homes on small lots.

Medium-High Density Residential (MHDR) - This designation provides a transition between traditional single-family neighborhoods and high density residential, and major activity or job centers. Dwelling types may include townhouses, garden apartments, and other forms of multi-family housing.

Neighborhood Commercial (NC) - This designation accommodates a mix of business, office, and residential uses that support the needs of residents living in the surrounding neighborhoods. Allowable uses include small grocery or drug stores, retail shops, and small-scale financial, business, personal services, and restaurants.

Commercial Mixed-Use (CMU) - This designation encourages the integration of retail and service commercial uses with office and/or residential uses. In mixed-use projects, commercial use is

the predominant use on the ground floor. This designation may also allow hospitals and other public/quasi-public uses. Other uses may be allowed by right or with approval of a Use Permit, as outlined in the Municipal Code.

Public Facilities and Services (PFS) - This designation includes sites for schools, hospitals, governmental offices, airports, and other facilities that have a unique public character.

Primary Open Space (POS) - This designation is intended to protect, in perpetuity, areas with sensitive habitats including oak woodlands, riparian corridors, wetlands, creekside greenways, and other habitat for highly sensitive species, as well as groundwater recharge areas and areas subject to flooding that are not used for agriculture.

Secondary Open Space (SOS) - This designation includes land used for both intensive and non-intensive recreational activities, such as parks, lakes, golf courses, and trails. Land within this category may also be used for resource management, detention basins, agriculture, grasslands and other similar uses.

Existing Zoning

Current Butte County zoning is AG-20/SP, with urbanized development subject to a Specific Plan and required environmental analysis. If the project is approved and the Butte Local Agency Formation Commission or LAFCo approves the request to annex the site into the City, the City will assign zoning consistent with the land use designations.

3.2 Regulatory Setting

Federal Regulations

There are no federal plans, policies, regulations, or laws pertaining to topics addressed under CEQA that are applicable to local land use and planning concerns. However, compliance with federal and state regulations that pertain to air quality, biological resources, cultural resources, energy, greenhouse gas emissions, hydrology, water quality and drainage and transportation are discussed in Sections 4.2, Air Quality, 4.3, Biological Resources, 4.4, Cultural Resources, 4.5, Energy and 4.7, Greenhouse Gases, 4.9, Hydrology, Water Quality and Drainage, and Section 4.13, Transportation and Circulation contained in Chapter 4.

State Regulations

Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganizations Act encourages the orderly formation of Local Government Formation Commissions (LAFCOs) and protects agricultural land resources by discouraging urban sprawl and coordinating logically and timed changes in local government boundaries. Butte LAFCO regulates boundary changes, annexations, and spheres of influence for cities, agencies and special districts within the county. Butte LAFCO has discretionary approval over the City's request to annex the project site into the city limits and is a responsible agency under CEQA. Butte LAFCO will review reorganization of services currently provided by the Butte County and other districts.

Local Regulations

Butte County Local Agency Formation Commission

The Butte County LAFCO is an independent agency with countywide jurisdiction over changes in organization and boundaries of cities and special districts including annexations, detachments, incorporations and formations. Butte County LAFCO has responsibility to minimize adverse impacts of the social, economic and environmental results of growth; to promote orderly development to provide for planned, well-ordered, efficient urban development with consideration of preserving agricultural and open space lands.

Butte County LAFCO is charged with ensuring the following concerns are addressed when evaluating property annexation:

- ***Orderly Growth***. LAFCO is charged with encouraging orderly growth and development. Providing housing for persons and families of all incomes is an important factor in promoting orderly development;
- ***Logical Boundaries***. LAFCO is responsible for encouraging the logical formation and determination of boundaries;
- ***Efficient Services.*** LAFCO must exercise its authority to ensure that affected populations receive adequate, efficient and effective governmental services; and,
- ***Preserve Agricultural and Open Spaces.*** LAFCO is required to exercise its authority to guide development away from open space and prime agricultural land uses unless such actions would not promote planned, orderly, and efficient development.

Specific policies from the Butte County LAFCo Policies and Procedures (Butte LAFCo 2010) relating to the project's request for annexation includes the following:

> *2.3 Urban Development*
>
> 2.3.1 LAFCO will encourage proposals that result in urban development to include annexation to a city wherever reasonably possible, and discourage proposals for urban development without annexation to a city. LAFCO will also encourage cities to annex lands that have been developed to urban levels as defined below, particularly areas that receive city services.
>
> *2.5 Balancing Jobs and Housing*
>
> LAFCO will normally encourage those applications, which improve the regional balance between jobs and housing within the jurisdiction of the affected local agency. LAFCO will consider the impact of a proposal on the regional supply of residential housing for all income levels. The agency that is the subject of the proposal must demonstrate to the Commission that any adverse impacts of the proposal on the regional affordable housing supply have been mitigated.
>
> *2.6 Compact Urban Form and Infill Development Encouraged*
>
> When reviewing proposals that result in urban development, LAFCO will consider whether the proposed development is timely, compact in form and contiguous to existing urbanized areas. LAFCO will favor development of vacant or under-utilized parcels already within a city or other urbanized area prior to annexation of new territory. However, the Butte LAFCO recognizes that

under certain circumstances the redevelopment of underutilized land and infill parcels are subject to the desires of the property owners necessitating the annexation of vacant lands on the periphery of the city boundaries.

2.7 Adequate Services

LAFCO will consider the ability of an agency to deliver adequate, reliable and sustainable services, and will not approve a proposal that has significant potential to diminish the level of service in the agency's current jurisdiction. The agency must provide satisfactory documentation of capacity to provide service within a reasonable amount of time.

2.8 Efficient Services

Community needs are normally met most efficiently and effectively by proposals that:

- Utilize existing public agencies rather than create new ones;
- Encourage collaboration between public agencies in order to obtain the greatest level of public support for the provision of consolidated services;
- Consolidate services and service providers if such consolidations enhance the efficiency and quality of service; and,
- Restructure agency boundaries and service areas to provide more logical, effective, and efficient local government services.

Conformance with General and Specific Plans

2.10.1 Consistency with General and Specific Plans. LAFCO will approve changes of organization or reorganization only if the proposal is consistent with the General Plan and relevant Specific Plans of the applicable planning jurisdiction.

2.10.2 Planning Jurisdiction. The applicable planning jurisdiction is as follows:

- For areas within a city's sphere of influence, the city is the applicable planning jurisdiction; and,
- For areas outside a city's sphere of influence, County is the applicable planning jurisdiction.

2.10.4 Consistency Found Adequate

For purposes of this standard, the proposal shall be deemed consistent if the proposed use is consistent with the applicable General Plan designation and text, the applicable General Plan is legally adequate and internally consistent, and the anticipated types of services to be provided are appropriate to the land use designated for the area. While LAFCO will ordinarily accept the finding of the planning jurisdiction as to consistency, LAFCO shall retain discretion to independently determine consistency where appropriate. LAFCO may require additional information, if necessary, particularly where the proposal involves an amendment to the General Plan of the applicable planning jurisdiction. (REVISED: May 4, 1996)

2.13 Agricultural and Open Space Land Conservation

Among LAFCO's core purpose is the preservation of open space lands and prime agricultural lands. The Commission will exercise the powers to conserve prime agricultural land as defined in Section 56064 of the Government Code, open space land as defined in Section 65560 of the Government Code, and unique farmland and land of statewide importance defined in PRC 21060.1, pursuant to the following standards. In order to more effectively carry out this mandate, the Commission may develop local standards to define and identify prime agricultural and open space lands.

2.13.1 Conditions for Approval of Prime Agricultural/Open Space Land Conversion

LAFCO will apply a heightened level of review when considering proposals for changes of organization or reorganization that are likely to result in the conversion of prime agricultural/open space land use to other uses. Only if the Commission finds that the proposal will lead to planned, orderly, and efficient development, will the Commission approve such a conversion. For purposes of this standard, a proposal leads to planned, orderly, and efficient development only if all of the following criteria are met:

- The land subject to the change of organization or reorganization is contiguous to either lands developed with an urban use or lands within the sphere and designated for urban development;
- The proposed development of the subject lands is consistent with the Sphere of Influence Plan, including the Municipal Service Review of the affected agency or agencies and the land subject to the change of organization is within the current 10-year Sphere of Influence boundary;
- The land subject to the change of organization is likely to be developed within five years. In the case of very large developments, annexation should be phased wherever feasible. If the Commission finds phasing infeasible for specific reasons, it may approve annexation if all or a substantial portion of the subject land is likely to develop within a reasonable period of time;
- Insufficient vacant non-prime or open space land exists within the existing agency boundaries or applicable 10-year Sphere of Influence that is planned and developable for the same general type of use; and,
- The proposal will have no significant adverse effect on the physical and economic integrity of other agricultural/open space lands.

2.13.3 Finding with Respect to Alternative Sites

The Commission will not make the affirmative findings that insufficient vacant non-prime or open space land exists within the Sphere of Influence Plan unless the applicable jurisdiction has identified within its Sphere of Influence all "prime agricultural land" and "open space land"; enacted measures to preserve prime agricultural/open space land identified within its Sphere of Influence for agricultural or open space use; and/or adopted as part of its General Plan specific measures to facilitate and encourage in-fill development as an alternative to the development of agricultural/open space lands.

2.13.4 Determining Impact on Adjacent Agricultural/Open Space Lands

In making the determination whether conversion will adversely impact adjoining prime agricultural or open space lands, LAFCO will consider the following factors:

- The agricultural/open space significance of the subject and adjacent areas relative to other agricultural/open space lands in the region;
- The use of the subject and the adjacent areas;
- Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent or nearby agricultural/open space land, or will be extended through or adjacent to any other agricultural/open space lands which lie between the project site and existing facilities;
- Whether natural or man-made barriers serve to buffer adjacent or nearby agricultural/open space land from the effects of the proposed development; and,
- Applicable provisions of the County's General Plan Agricultural Element, Open Space and Land Use Elements, applicable growth-management policies, or other statutory provisions designed to protect agriculture or open space. (Refer to http://www.buttecounty.net/dds /Planning to locate Butte County's General Plan.)

4.1 General Standards for Annexation and Detachment

These standards govern LAFCO determinations regarding annexations to and detachments from all agencies. The annexation or detachment must be consistent with the general policies set forth in these Policies and Procedures. [GC§56375(g)]

4.1.1 Consistency with Spheres and Municipal Service Reviews

The annexation or detachment must be consistent with the sphere of influence. The annexation must also be consistent with the applicable Municipal Service Review. An annexation or detachment shall be approved only if the Municipal Service Review and the Sphere of Influence Plan of the affected agency(s) demonstrates that adequate services will be provided within the time frame needed by the inhabitants of the annexed or detached area. If a detachment occurs, the sphere will be modified.

4.1.2 Plan for Services Required

Every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. This Plan for Service must be consistent with the Municipal Service Review of the agency. [GC§56375(h)].

Butte County General Plan 2030

The project site is currently under the jurisdiction of Butte County; however, as noted earlier, the project site is within the City's SOI and future development of the site was contemplated in the City's 2030 General Plan and evaluated in the General Plan EIR. Because development of the VESP is dependent upon the site being annexed into the City, the City is serving as lead agency. Therefore, an analysis of consistency with the Butte County General Plan is not provided.

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040

The Butte County Association of Governments or BCAG is responsible for preparing the federally required regional transportation plan (RTP) and the state-required Sustainable Communities Strategy (SCS) in coordination with the five incorporated cities/town in the county (cities of Biggs, Chico, Gridley, Oroville, and the Town of Paradise). The RTP/SCS specifies policies, projects and programs necessary over a 20+ year period to maintain, manage and improve the region's transportation system. The primary objective of the SCS is to meet greenhouse gas (GHG) reduction targets established by the State by reducing vehicle trips. BCAG adopted the latest update to the RTP/SCS in December 2016, which is based on projections for growth in population, housing and jobs, provided by the cities and counties that comprise BCAG.

Compliance with objectives and policies that address circulation and transportation are addressed in Section 4. 13, Transportation and Circulation and polices relevant to air quality, energy and greenhouse gas emissions are addressed in Sections 4.2, Air Quality 4.5, Energy and 4.7, Greenhouse Gases. The policies relevant to land use include the following:

Objective 10.3. Roads that are pedestrian friendly encourage bicycle trips and the use of the mass transportation system.

Policy 10.3.1. Assist member jurisdictions in developing and implementing strategies and design criteria that make new commercial and residential developments friendly to pedestrians and bicyclists.

Objective 10.4. Preserve productive farmland and land that provides habitat for rare, endangered or threatened species.

Policy 10.4.1. Consider impacts on prime farmland and areas that support protected wildlife.

Policy 10.4.2. Encourage participation in Butte Regional Conservation Plan (BRCP).

City of Chico 2030 General Plan

The General Plan identifies five new growth areas to help meet the City's future housing and job needs. These areas are designated as Special Planning Areas (SPAs).The General Plan designates land uses for these areas provide connected and complete neighborhoods with a mix of housing types, services, employment and shopping opportunities, parks, and open space (City of Chico 2017). The project site is located within SPA-5, Doe Mill/Honey Run SPA. The General Plan states the following for the Doe Mill/Honey Run SPA:

> Planning for the Doe Mill/Honey Run SPA will result in a recreation oriented, mixed-use development offering a broad range of housing types and densities. The SPA will include a village core, retail along Skyway, a variety of residential densities (including very low, low, medium, and medium-high density), open space areas on the SPA's east side, a community park, neighborhood and pocket parks, public uses (potentially an elementary school site), and preserve areas with creekside corridors. Roadways, trails, and bikeways will be integrated into the natural landscape to connect the residential areas to parks, open space, offices, public facilities, and services.
>
> The village core will provide a mix of professional offices, neighborhood retail, and other services. The community park will be designed and programmed with the Chico Area Recreation and Park District to include a variety of recreational amenities. Open space areas will provide a buffer

along the entire Stilson Canyon rim to the north and along Honey Run Road to the south, and will establish a permanent buffer against foothill encroachment to the east.

Design standards will be developed for site planning, building design, and landscaping to minimize visual impacts and to address wildland fire considerations for this foothill development. Lighting standards will be developed to address dark sky concerns and visual impacts. Special consideration will be given to protecting and preserving sensitive habitats, including the many ephemeral streams that drain the site, as well as the wetland areas on the western edge. Site planning will consider and protect groundwater recharge areas (City of Chico 2017, Appendix C p. C-6).

The City's General Plan includes the following policy direction specific to SPAs in the Land Use Element:

Goal LU-6: Comprehensively plan the Special Planning Areas to meet the City's housing and jobs needs.

Policy LU-6.1 (Special Planning Area Designation) - To meet the City's growth needs, support development in the following five Special Planning Areas: Bell Muir, Barber Yard, Doe Mill/Honey Run, North Chico, South Entler.

Policy LU-6.2 (Special Planning Area Implementation) – Allow flexibility when planning the Special Planning Areas in order to meet changing community housing and jobs needs.

Action LU-6.2 (SPA Planning Requirements) – Require more detailed land use planning in the form of a specific plan, planned development, or other comprehensive plan for each Special Planning Area (SPA) prior to development occurring on vacant land within an SPA. In addition to the Actions specific to each SPA, subsequent land use planning shall:

- Create a parcel-specific land use plan based on site, infrastructure, and environmental analysis.
- Include public facility financing plans, infrastructure phasing plans, and other studies as applicable.
- Consider opportunities for the provision of housing units affordable to very low, low, and/or moderate income households within the SPA using governmental subsidies or other incentives.
- Include the range of uses identified on the SPA conceptual land use plan (a conceptual land use plan is not intended to direct specific acreage or organization of land uses, but is intended to depict the general mix of desired land uses within the project area).
- Have no significantly greater traffic, air quality, or noise impacts than those analyzed in the General Plan environmental analysis (residential and non-residential development assumptions for each SPA are provided in [General Plan] Appendix C).

Action LU-6.2.4 (Doe Mill/Honey Run SPA Planning) – Plan the Doe Mill/Honey Run SPA with a broad range of housing types and densities integrated with open space and recreational areas, supporting commercial services, and public facilities. Subsequent planning will:

- Address circulation with primary connections to the site via Skyway and E. 20th Street.
- Incorporate accessible open space on the eastern portion of the SPA, a community park, as well as neighborhood and mini parks.
- Maintain open space by clustering development and providing open space buffers on the northern, eastern, and southern edges of the SPA.

- Include visual simulations to ensure that development is not visually intrusive as viewed from lower elevations.
- Incorporate special lighting standards to reduce impacts on the nighttime sky.
- Address wildland fire considerations.

The General Plan includes 9 Guiding Principles that reflect the core values of the community as set forth in the goals, policies, and actions included in the General Plan. The Guiding Principles include a desire for fiscally and environmentally responsible development; preservation of a healthy environment and conservation of resources; sustainability; and the creation and enhancement of complete, well-designed, and walkable neighborhoods.

Goals and policies from the Sustainability Element that pertain to land use include the following:

Goal SUS-1: Balance the environment, economy and social equity, as defined in the General Plan, to create a sustainable Chico.

Policy SUS-1.1 (General Plan Consistency) – Ensure proposed development projects, policies, and programs are consistent with the General Plan.

Policy SUS-1.6 (Public Health) - Emphasize the importance of public health in land use planning, infrastructure planning, and implementing City policies and programs.

Goal SUS-7: Support local food systems in Chico.

Policy SUS-7.2 (Support Community Gardens) – Support community gardens in appropriate locations in the City.

Land use policies applicable to the proposed project include the following:

Goal LU-1: Reinforce the City's compact urban form, establish urban growth limits, and manage where and how growth and conservation will occur.

Policy LU-1.2 (Growth Boundaries/Limits) - Maintain long-term boundaries between urban and agricultural uses in the west and between urban uses and the foothills in the east, and limit expansion north and south to produce a compact urban form.

Policy LU-1.3 (Growth Plan) - Maintain balanced growth by encouraging infill development where City services are in place and allowing expansion into Special Planning Areas.

Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.

Policy LU-2.3 (Sustainable Land Use Pattern) - Ensure sustainable land use patterns in both developed areas of the City and new growth areas.

Policy LU-2.5 (Open Space and Resource Conservation) – Protect areas with known sensitive resources.

Goal LU-3: Enhance existing neighborhoods and create new neighborhoods with walkable access to recreation, places to gather, jobs, daily shopping needs, and other community services.

Policy LU-3.1 (Complete Neighborhoods) - Direct growth into complete neighborhoods with a land use mix and distribution intended to reduce auto trips and support walking, biking, and transit use.

Applicable goals and policies from the Community Design Element:

Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.

Policy CD-1.1 (Natural Features and Cultural Resources) – Reinforce the City's positive and distinctive image by recognizing and enhancing the natural features of the City and protecting cultural and historic resources.

Action CD-1.1.1 (Highlight Features and Resources) – Incorporate and highlight natural features such as scenic vistas, creeks, and trees, as well as cultural resources such as rock walls, into project design.

Action CD-1.1.2 (Landscape Improvement) – Emphasize landscaping as a fundamental design component, retaining mature landscaping when appropriate, to reinforce a sense of the natural environment and to maintain an established appearance.

Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.

Policy CD-2.1 (Walkable Grid and Creek Access) – Reinforce a walkable grid street layout and provide linkages to creeks and other open spaces.

Action CD-2.1.1 (Circulation and Access) – As part of project review, integrate a predominately grid-based street pattern into new development to enhance walkability and public health.

Action CD-2.1.2 (Bike Trails, Paths and Medians) – Establish linkages and an improved sense of place through enhanced bike trails, pedestrian paths, landscaped medians and parkways.

Policy CD-2.4 (Context Sensitive Foothill Development) – Protect viewsheds from foothill development, through the careful location and design of roads, buildings, lighting, landscaping, and other infrastructure.

Action CD-2.4.1 (Protection of Foothill Viewshed) – Design and blend foothill development with the surrounding landscape and topography to diminish its visual prominence from the valley floor.

Action CD-2.4.2 (Foothill Light Levels) – Design low light levels in foothill settings to optimize views of dark skies and minimize light pollution.

Action CD-2.4.3 (Foothill Streets) – In order to minimize cut and fill grading operations in foothill areas, design new streets at the minimum dimension necessary for access and parking.

Action CD-2.4.4 (Block Lengths) – Minimize the length of street blocks in foothill development.

Action CD-2.4.5 (Contours of Natural Slope) – Limit the extent and amount of grading in foothill areas, and where grading occurs, emulate the contours of the natural slope.

Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.

Policy CD-3.1 (Lasting Design and Materials) – Promote architectural design that exhibits timeless character and is constructed with high quality materials.

Policy CD-3.3 (Pedestrian Environment and Amenities) – Locate parking areas and design public spaces within commercial and mixed-use projects in a manner that promotes pedestrian activity.

Policy CD-3.4 (Public Safety) – Include public safety considerations in community design.

Goal CD-4: Maintain and enhance the character of Chico's diverse neighborhoods.

Policy CD-4.1 (Distinctive Character) – Reinforce the distinctive character of neighborhoods with design elements reflected in the streetscape, landmarks, public art, and natural amenities.

Action CD-4.1.1 (Neighborhood Design Details) – Develop and implement neighborhood plans that identify neighborhood design qualities and characteristics.

Action CD-4.1.3 (Sense of Place) – As part of the design review of development and capital projects, encourage the integration of civic, cultural, natural, art, and other themes that create a sense of place for each neighborhood and contribute to the overall character of the community.

Goal CD-6: Enhance gateways and wayfinding elements for an improved sense of arrival and orientation for residents and visitors throughout Chico.

Policy CD-6.2 (No Gated Subdivisions) – Do not allow new gated subdivisions because they isolate parts of the community from others, create an unfriendly appearance, and do not support social equity.

The City's Housing Element 2014-2022 includes the following goals and policies applicable to the proposed project.

Goal H.3: Promote construction of a wide range of housing types.

Policy H.3.1: Ensure a balanced rate of growth between housing production, employment and provision of services.

Policy H.3.3: Promote a mix of dwelling types and sizes throughout the City.

Policy H.3.4: Maintain an adequate supply of rental housing to meet the needs of all renters, including university students and employees.

Goal H.4: Encourage the creation of housing for persons with special needs.

Policy H.4.1: Make housing accessible to persons with disabilities.

Policy H.4.2: Seek to incorporate childcare services into new residential development.

Policy H.4.4: Assist in the provision of housing for seniors.

Action H.4.4.1: Encourage the development of a variety of housing options for the elderly. Promote programs that allow seniors to age in place.

Goal H.6: Increase homeownership.

Policy H.6.1: Promote homeownership opportunities for all economic sectors of the population.

Policy H.6.2: Expand homeownership opportunities for first-time homebuyers.

Goal H.7: Encourage energy efficiency in housing.

Policy H.7.1: Continue to enforce energy standards required by the State Energy Building Regulations and California Building Code, and reduce long-term housing costs through planning and applying energy conservation measures.

3.3 Land Use Consistency Evaluation

As discussed above, the project site is undeveloped. There is residential development to the north and west of the project site, but connections between these areas are not provided through the project site. Therefore, development of the site would not physically divide an established community.

The land use consistency evaluation reviews the proposed project for consistency with applicable goals and policies contained in the City's 2030 General Plan, as well as the City's Guiding Principles that pertain to land use, Butte County LAFCO policies, and BCAG's RTP/SCS land use objectives and policies. Physical environmental impacts resulting from development of the project site are discussed in the applicable technical sections in Chapter 4 of this Draft EIR. The discussion in this chapter differs from the impact discussions in that only general land use plan or policy consistency issues are discussed, as opposed to a discussion of the physical impacts on the environment that could occur with implementation of the proposed project. This discussion complies with Section 15125(d) of the CEQA Guidelines, which requires EIRs to discuss potential conflicts with local or regional plans as part of the environmental setting. Therefore, the following analyzes consistency with the City's 2030 General Plan, Housing Element 2014-2022, and BCAG's RTP/SCS plan.

This consistency analysis provides the reader with a general overview of whether the project is in harmony with the overall intent of the City's 2030 General Plan goals and policies. It is within the City's purview to decide if the proposed project is consistent or inconsistent with applicable City goals or policies. The discussions in this Draft EIR on the subject of General Plan consistency represent the best attempt of City staff to advise the City Council of its opinions as to whether the proposed project is consistent with identified goals and policies of the City's General Plan. Under state law, a Specific Plan must be consistent with the General Plan (Cal. Gov't Code Section 65454) and cannot be approved if it is inconsistent with the General Plan; therefore, the proposed project could not proceed if determined by the City Council to be inconsistent with the General Plan. Based on the evaluations contained in the Draft EIR, including the following discussion, the proposed project is generally consistent with the City's 2030 General Plan.

The General Plan designates five new growth areas or special planning areas within the City's SOI, including the project site. The project site is designated in the General Plan as SPA-5 or the Doe Mill/Honey Run SPA. The General Plan includes a conceptual land use plan for this area (see Appendix C to the General Plan) that includes a mix of residential commercial, public facilities and parks and open space uses. The proposed project's land uses and development assumptions are generally consistent with the

direction provided in the City's General Plan, including the application of a variety of residential, commercial, and open space uses. Upon approval, the project site would be rezoned to include a special overlay district which specifies that the allowable uses and development standards contained in the VESP apply to the site. The application of this zoning overlay to the project site would ensure that the resulting development is consistent with the General Plan.

Table 3-1 provides an evaluation of the project's consistency with the BCAG RTP/SCS and the City's 2030 General Plan.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Objective 10.3. Roads that are pedestrian friendly encourage bicycle trips and the use of the mass transportation system. **Policy 10.3.1.** Assist member jurisdictions in developing and implementing strategies and design criteria that make new commercial and residential developments friendly to pedestrians and bicyclists.	Consistent. The VESP is designed to encourage and facilitate pedestrian and bicycle access throughout the plan area through an extensive network of trails that connect residential areas with the commercial uses.
Objective 10.4. Preserve productive farmland and land that provides habitat for rare, endangered or threatened species. **Policy 10.4.1** Consider impacts on prime farmland and areas that support protected wildlife. **Policy 10.4.2** Encourage participation in Butte Regional Conservation Plan (BRCP).	The project site is not designated prime farmland and has historically only been used for grazing. Impacts to biological resources are evaluated in this EIR, including participation in the BRCP.
City of Chico 2030 General Plan	
Sustainability Element	
Goal SUS-1: Balance the environment, economy and social equity, as defined in the General Plan, to create a sustainable Chico.	Consistent. The project is designed consistent with the General Plan and includes a mix of residential and commercial uses designed to promote a healthy and sustainable lifestyle and community. This includes an extensive network of multi-use trails, and housing options for a variety of lifestyles, incomes and ages.
Policy SUS-1.1 (General Plan Consistency) – Ensure proposed development projects, policies, and programs are consistent with the General Plan.	Consistent. The VESP has been designed consistent with the City's 2030 General Plan. The City's 2030 General Plan is a legally adequate planning document. The project's consistency with applicable general plan goals and policies as discussed in this chapter illustrates the specific plan's consistency with the general plan.
Policy SUS-1.6 (Public Health) - Emphasize the importance of public health in land use planning, infrastructure planning, and implementing City policies and programs.	Consistent. The project is designed consistent with the General Plan and includes a mix of residential and commercial uses designed to promote a healthy and sustainable lifestyle and community. This includes an extensive network of multi-use trails, energy efficient, resource efficient, and fire resistant buildings, housing and options for a variety of lifestyles, incomes and ages.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Goal SUS-7: Support local food systems in Chico.	Consistent. The project supports providing local foods within the Village Core and Village Commercial land uses.
Policy SUS-7.2 (Support Community Gardens) Support community gardens in appropriate locations in the City.	Consistent. The project supports the inclusion of community gardens within the Village Core.
Land Use Element	
Goal LU-1: Reinforce the City's compact urban form, establish urban growth limits, and manage where and how growth and conservation will occur.	Consistent. The project site is identified in the City's General Plan as a growth area, and the Specific Plan proposes clustering development to maintain large areas of the site in open space.
Policy LU-1.2 (Growth Boundaries/Limits) Maintain long-term boundaries between urban and agricultural uses in the west and between urban uses and the foothills in the east, and limit expansion north and south to produce a compact urban form.	Consistent. The project is proposed on a site designated by the City for future development and proposes a buffer along the eastern boundary of the site, adjacent to undeveloped land in the County.
Policy LU-1.3 (Growth Plan) Maintain balanced growth by encouraging infill development where City services are in place and allowing expansion into Special Planning Areas.	Consistent. The project is consistent with the General Plan's directive to develop the project site with a mix of residential, commercial, public facilities, parks and open space uses.
Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.	Consistent. The project's land use plan provides a mix of land uses consistent with the General Plan direction for development of this area.
Policy LU-2.3 (Sustainable Land Use Pattern) Ensure sustainable land use patterns in both developed areas of the City and new growth areas.	Consistent. The project is designed consistent with the General Plan and includes a mix of residential and commercial uses designed to promote a healthy and sustainable lifestyle and community. This includes an extensive network of multi-use trails, energy efficient, resource efficient, and fire resistant buildings, housing and options for a variety of lifestyles, incomes and ages.
Policy LU-2.5 (Open Space and Resource Conservation) Protect areas with known sensitive resources.	Consistent. The project has been designed to minimize tree removal, maintain on-site rock walls, preserve known cultural resources, preserve the on-site Butte County meadowfoam plant, and preserve approximately half of the site in open space or parks.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Goal LU-3: Enhance existing neighborhoods and create new neighborhoods with walkable access to recreation, places to gather, jobs, daily shopping needs, and other community services.	Consistent. The project has been designed with multi-use trails that connect all residences with the on-site commercial/retail uses.
Policy LU-3.1 (Complete Neighborhoods) Direct growth into complete neighborhoods with a land use mix and distribution intended to reduce auto trips and support walking, biking, and transit use.	Consistent. The project has been designed to include a series of multi-use trails to connect all land uses via the trail system. This will encourage residents to walk or ride their bikes to access the school, commercial areas and parks. In addition, the internal roadway network is designed to allow electric vehicles
Goal LU-6 Comprehensively plan the Special Planning Areas to meet the City's housing and jobs needs.	Consistent. The project includes a Specific Plan that provides a comprehensive plan consistent with General Plan direction for the Special Planning Area.
Policy LU-6.1 (Special Planning Area Designation) To meet the City's growth needs, support development in the following five Special Planning Areas: Bell Muir, Barber Yard, Doe Mill/Honey Run, North Chico, South Entler.	Consistent. The project is proposing a Specific Plan to develop SPA-5, Doe Mill/Honey Run.
Policy LU-6.2 (Special Planning Area Implementation) Allow flexibility when planning the Special Planning Areas in order to meet changing community housing and jobs needs. **Action LU-6.2 (SPA Planning Requirements)** Require more detailed land use planning in the form of a specific plan, planned development, or other comprehensive plan for each Special Planning Area (SPA) prior to development occurring on vacant land within an SPA. In addition to the Actions specific to each SPA, subsequent land use planning shall: • Create a parcel-specific land use plan based on site, infrastructure, and environmental analysis. • Include public facility financing plans, infrastructure phasing plans, and other studies as applicable. • Consider opportunities for the provision of housing units affordable to very low, low, and/or moderate-income	Generally Consistent. The proposed project includes a Specific Plan that provides a more refined land use plan, infrastructure phasing plans and financing and implementation plans. The Specific Plan includes a range of housing options and densities for ownership and rental including for individuals 55+. The EIR prepared for the project is evaluating the environmental impacts associated with construction and operation of the project. Based on the EIR impacts would generally not be significantly greater than what was identified in the General Plan EIR.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
households within the SPA using governmental subsidies or other incentives. • Include the range of uses identified on the SPA conceptual land use plan (a conceptual land use plan is not intended to direct specific acreage or organization of land uses, but is intended to depict the general mix of desired land uses within the project area). • Have no significantly greater traffic, air quality, or noise impacts than those analyzed in the General Plan environmental analysis (residential and non-residential development assumptions for each SPA are provided in [General Plan] Appendix C).	
Action LU-6.2.4 (Doe Mill/Honey Run SPA Planning) Plan the Doe Mill/Honey Run SPA with a broad range of housing types and densities integrated with open space and recreational areas, supporting commercial services, and public facilities. Subsequent planning will: • Address circulation with primary connections to the site via Skyway and E. 20th Street. • Incorporate accessible open space on the eastern portion of the SPA, a community park, as well as neighborhood and mini parks. • Maintain open space by clustering development and providing open space buffers on the northern, eastern, and southern edges of the SPA. • Include visual simulations to ensure that development is not visually intrusive as viewed from lower elevations. • Incorporate special lighting standards to reduce impacts on the nighttime sky. • Address wildland fire considerations.	Consistent. The proposed project has been designed consistent with the General Plan land use plan for this SPA and includes a mix of housing types/densities, commercial uses, public facilities, and parks and open space. The circulation/infrastructure plans include connections to Skyway and E. 20th Street. A range of parks are provided and open space surrounds the northern, eastern and southern boundaries. Development is proposed in a linear fashion leaving open space buffers throughout. Visual simulations have been prepared for the project and are included in Section 4.1, Aesthetics. The Specific Plan includes design guidelines and development standards that provide lighting standards to reduce light spillover effects and to protect views of nighttime skies and minimize light pollution. Lastly, the Specific Plan includes measures to address wildfire, and these concerns are evaluated in Section 4.14, Wildfire.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Community Design Element	
Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.	Consistent. The VESP Residential Design Guidelines have been developed to ensure new residential development compliments and is consistent with the City's community values and character.
Policy CD-1.1 (Natural Features and Cultural Resources) Reinforce the City's positive and distinctive image by recognizing and enhancing the natural features of the City and protecting cultural and historic resources.	Consistent. The VESP includes policies and actions to protect and enhance the existing unique natural features on the site and to preserve protected habitat and cultural resources, including rock walls.
Action CD-1.1.1 (Highlight Features and Resources) – Incorporate and highlight natural features such as scenic vistas, creeks, and trees, as well as cultural resources such as rock walls, into project design.	Consistent. The VESP includes policies and actions to preclude development on top of ridges or hilltops. Further, design guidelines and development standards would limit grading in hillside areas, protect natural amenities, such as views, mature trees, creeks, rock walls, riparian corridors, and similar features unique to the site.
Action CD-1.1.2 (Landscape Improvement) – Emphasize landscaping as a fundamental design component, retaining mature landscaping when appropriate, to reinforce a sense of the natural environment and to maintain an established appearance.	Consistent. The VESP includes landscape design guidelines designed to reinforce the existing natural environment and the existing oak trees within the project site have been identified as key landmarks to preserve.
Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.	Consistent. The VESP has been designed to provide a variety of transitions between neighborhoods and an extensive connection of pedestrian and bike paths throughout the entire project area.
Policy CD-2.1 (Walkable Grid and Creek Access) – Reinforce a walkable grid street layout and provide linkages to creeks and other open spaces.	Consistent. The VESP circulation plan has been designed with an extensive network of pedestrian and bicycle pathways to provide access to parks and open space areas throughout the project site.
Action CD-2.1.1 (Circulation and Access) – As part of project review, integrate a predominately grid-based street pattern into new development to enhance walkability and public health.	Generally consistent. The VESP includes a master circulation plan that shows the main project roadways, but does not include all the proposed residential streets. The project does include an extensive pedestrian and bicycle trail system that will connect the entire plan area to encourage walkability to the on-site commercial uses as well as throughout the open space areas.
Action CD-2.1.2 (Bike Trails, Paths and Medians) – Establish linkages and an improved sense of place through enhanced bike trails, pedestrian paths, landscaped medians and parkways.	Consistent. The VESP includes an extensive system of pedestrian and bicycle paths throughout the entire project site. Landscaped medians and parkways are also provided in the circulation plan.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Policy CD-2.4 (Context Sensitive Foothill Development) Protect viewsheds from foothill development, through the careful location and design of roads, buildings, lighting, landscaping, and other infrastructure.	Consistent. The VESP design guidelines and development standards specifically limit the height of buildings, prohibit development on any ridgelines or hilltops, limit mass grading, and provide requirements for lighting and infrastructure.
Action CD-2.4.1 (Protection of Foothill Viewshed) – Design and blend foothill development with the surrounding landscape and topography to diminish its visual prominence from the valley floor.	Consistent. The VESP design guidelines and development standards include a color palette to minimize the visual prominence of buildings and to blend into the environment. The project also retains a majority of the mature trees on-site to maintain as much of the existing environment possible.
Action CD-2.4.2 (Foothill Light Levels) – Design low light levels in foothill settings to optimize views of dark skies and minimize light pollution.	Consistent. The VESP design guidelines and development standards include specific lighting guidelines that are "dark-sky" compliant consistent with the City's General Plan lighting policies and recommendations, as well as the City's Design Guidelines Manual.
Action CD-2.4.3 (Foothill Streets) – In order to minimize cut and fill grading operations in foothill areas, design new streets at the minimum dimension necessary for access and parking.	Consistent. The VESP specifically states that grading is intended to be minimized, to maintain the existing contours of the land, as well as ensure development results in minimal disturbances of existing or natural terrain.
Action CD-2.4.4 (Block Lengths) – Minimize the length of street blocks in foothill development.	Unknown. A tentative map is not part of the project so the detail on the length of street blocks is not known.
Action CD-2.4.5 (Contours of Natural Slope) – Limit the extent and amount of grading in foothill areas, and where grading occurs, emulate the contours of the natural slope.	Consistent. The VESP specifically states that grading is intended to be minimized, to maintain the existing contours of the land, as well as ensure development results in minimal disturbances of existing or natural terrain.
Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.	The VESP includes guiding principles that include promoting a healthy and sustainable community and preservation of oak woodlands, seasonal creek corridors, wetlands, ridgelines, and other natural landforms and features. The project has been designed to specifically create a sense of place that builds on the lifestyle that makes the City a desirable place to live.
Policy CD-3.1 (Lasting Design and Materials) – Promote architectural design that exhibits timeless character and is constructed with high quality materials.	Consistent. The VESP includes detailed design guidelines and development standards to ensure future development is constructed with sustainable materials.
Policy CD-3.3 (Pedestrian Environment and Amenities) – Locate parking areas and design public spaces within commercial and mixed-use projects in a manner that promotes pedestrian activity.	Consistent. One of the primary goals of the VESP is to enable residents' access to the commercial areas by both the Class I Path system and Neighborhood Electric Vehicle (NEV) lanes to promote pedestrian and bicycle access and a reduction in vehicle trips.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Policy CD-3.4 (Public Safety) – Include public safety considerations in community design.	Consistent. The VESP design guidelines include Crime Prevention Through Environmental Design (CPTED) principles that include simple safety design concepts.
Goal CD-4: Maintain and enhance the character of Chico's diverse neighborhoods.	Consistent. The VESP includes design guidelines developed, in part, based on the City's existing character present in older neighborhoods.
Policy CD-4.1 (Distinctive Character) – Reinforce the distinctive character of neighborhoods with design elements reflected in the streetscape, landmarks, public art, and natural amenities.	Consistent. The VESP design guidelines encourage the protection of natural amenities, such as views, mature trees, creeks, rock walls, and riparian corridors and also encourage incorporating rock outcroppings, vegetation, and drainage swale areas into residential lots.
Action CD-4.1.1 (Neighborhood Design Details) – Develop and implement neighborhood plans that identify neighborhood design qualities and characteristics.	Consistent. The VESP includes detailed design guidelines that identify neighborhood design qualities and characteristics such as protecting natural features including trees, water ways, and unique features including the rock walls.
Action CD-4.1.3 (Sense of Place) – As part of the design review of development and capital projects, encourage the integration of civic, cultural, natural, art, and other themes that create a sense of place for each neighborhood and contribute to the overall character of the community.	Consistent. The VESP includes actions to incorporate and highlight existing trees, creeks, rock walls and other natural features and also encourages public art in public gathering areas.
Goal CD-6: Enhance gateways and wayfinding elements for an improved sense of arrival and orientation for residents and visitors throughout Chico.	Consistent. The VESP design guidelines include details on the proposed signage program to be provided throughout the plan area
Policy CD-6.2 (No Gated Subdivisions) – Do not allow new gated subdivisions because they isolate parts of the community from others, create an unfriendly appearance, and do not support social equity.	Generally consistent. The VESP Design Guidelines do not include standards or guidelines for gated neighborhoods. However, the 55+ Senior Housing component of the project may include gated facilities (i.e., assisted living, memory care) but at this time it is not known what specific uses may be developed. The design guidelines include details on fencing, but there is no information specific to gated neighborhoods.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Open Space and Environment Element	
Goal OS-5: Preserve agricultural areas for the production of local food and the maintenance of Chico's rural character.	Consistent. The project site does not include any areas that are currently used for producing local food.
Policy OS-5.2 (Agricultural Resources) – Minimize conflicts between urban and agricultural uses by requiring buffers or use restrictions.	Consistent. The VESP includes a buffer along the eastern boundary of the site adjacent to land in the County designated for grazing.
Action OS-5.2.1 (Agricultural Buffers) – Require buffers for development adjacent to active agricultural operations along the Greenline to reduce incompatibilities, and explore opportunities for public uses within buffers.	Consistent. The City's active agricultural areas and the Greenline are located in the western portion of the City. The project is not located in proximity to the Greenline, but as noted above provides a buffer adjacent to agricultural lands used for grazing to the east.
Housing Element	
Goal H.3: Promote construction of a wide range of housing types.	Consistent. The VESP includes a range of housing types to address a range of income levels.
Policy H.3.1: Ensure a balanced rate of growth between housing production, employment and provision of services.	Generally consistent. The VESP includes a mix of commercial and office uses to serve the needs of project residents. The project is generally consistent with this policy because 477,155 square feet of neighborhood-serving commercial uses are proposed.
Policy H.3.3: Promote a mix of dwelling types and sizes throughout the City.	Consistent. The VESP includes a mix of single-family and multi-family units at a range of densities, housing for seniors, and also smaller work force housing units.
Policy H.3.4: Maintain an adequate supply of rental housing to meet the needs of all renters, including university students and employees.	Consistent. It is anticipated some of the multi-family housing units may be available as rentals.
Goal H.4: Encourage the creation of housing for persons with special needs.	Consistent. The project includes a range of housing types to meet the needs of both families and seniors. Specific housing types are not available at this time.
Policy H.4.1: Make housing accessible to persons with disabilities.	Consistent. It is anticipated the senior housing would be ADA accessible and other units may also meet ADA requirements; however, specific housing types are not available at this time.
Policy H.4.2: Seek to incorporate childcare services into new residential development.	Unknown. Specific uses have not yet been defined.
Policy H.4.4: Assist in the provision of housing for seniors.	Consistent. The project includes housing for seniors 55+.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
Action H.4.4.1: Encourage the development of a variety of housing options for the elderly. Promote programs that allow seniors to age in place.	Consistent. The project includes a range of housing options for seniors 55+.
Goal H.6: Increase homeownership.	Consistent. The project includes a range of housing including smaller work force housing to accommodate a range of incomes.
Policy H.6.1: Promote homeownership opportunities for all economic sectors of the population.	Consistent. The project includes a range of housing including smaller work force housing to accommodate a range of incomes.
Policy H.6.2: Expand homeownership opportunities for first-time homebuyers.	Consistent. The project includes a range of housing including smaller work force housing to accommodate a range of incomes.
Goal H.7: Encourage energy efficiency in housing.	Consistent. The VESP includes specific policies and actions to meet and exceed title 24 energy efficiency standards.
Policy H.7.1: Continue to enforce energy standards required by the State Energy Building Regulations and California Building Code, and reduce long-term housing costs through planning and applying energy conservation measures.	Consistent. The VESP includes specific policies and actions to meet and exceed title 24 energy efficiency standards.
Butte County Local Agency Formation Commission	
2.3 Urban Development 2.3.1 LAFCO will encourage proposals that result in urban development to include annexation to a city wherever reasonably possible, and discourage proposals for urban development without annexation to a city. LAFCO will also encourage cities to annex lands that have been developed to urban levels as defined below, particularly areas that receive city services.	Consistent. The applicant is requesting the project site be annexed to the City. The project site is within the City's SOI and annexation of the site was contemplated in the City's General Plan.
2.5 Balancing Jobs and Housing LAFCO will normally encourage those applications, which improve the regional balance between jobs and housing within the jurisdiction of the affected local agency. LAFCO will consider the impact of a proposal on the regional supply of residential housing for all income levels. The agency that is the subject of the proposal must demonstrate to the Commission that any adverse impacts of the proposal on the regional affordable housing supply have been mitigated.	Generally consistent. The VESP includes 477,155 square feet of neighborhood-serving commercial uses and a mix of single-family and multi-family units at a range of densities, housing for seniors, and also smaller work force housing units to accommodate a range of incomes.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
2.6 Compact Urban Form and Infill Development Encouraged When reviewing proposals that result in urban development, LAFCO will consider whether the proposed development is timely, compact in form and contiguous to existing urbanized areas. LAFCO will favor development of vacant or under-utilized parcels already within a city or other urbanized area prior to annexation of new territory. However, the Butte LAFCO recognizes that under certain circumstances the redevelopment of underutilized land and infill parcels are subject to the desires of the property owners necessitating the annexation of vacant lands on the periphery of the city boundaries.	Generally consistent. The VESP is contiguous to the City of Chico and generally designed as a compact land use plan to maximize preservation of open space for parks and trails.
2.7 Adequate Services LAFCO will consider the ability of an agency to deliver adequate, reliable and sustainable services, and will not approve a proposal that has significant potential to diminish the level of service in the agency's current jurisdiction. The agency must provide satisfactory documentation of capacity to provide service within a reasonable amount of time.	Consistent. The EIR has evaluated the ability of the service providers to serve the project and capacity of the City's wastewater treatment plant (WWTP) to serve proposed development. Based on the analysis service providers, including the City's WWTP have capacity to serve the project. The City's Municipal Services Review and Sphere of Influence Plan (2018) evaluates the ability of service providers to serve future development within the SOI.
2.8 Efficient Services Community needs are normally met most efficiently and effectively by proposals that: • Utilize existing public agencies rather than create new ones; • Encourage collaboration between public agencies in order to obtain the greatest level of public support for the provision of consolidated services; • Consolidate services and service providers if such consolidations enhance the efficiency and quality of service; and, • Restructure agency boundaries and service areas to provide more logical, effective, and efficient local government services.	Consistent. The project would use existing public service providers, including the City, to serve the project. With the exception of annexing the site to the City, no other service or agency boundaries would be required.
2.10. Conformance with General and Specific Plans 2.10.1 Consistency with General and Specific Plans. LAFCO will approve changes of organization or reorganization only if the	Consistent. The VESP has been designed consistent with the City's 2030 General Plan Special Planning Area 5 (SPA-5) or the Doe Mill/Honey Run SPA and City goals and policies. The City's General Plan assigned a mix of

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
proposal is consistent with the General Plan and relevant Specific Plans of the applicable planning jurisdiction. 2.10.2 Planning Jurisdiction. The applicable planning jurisdiction is as follows: • For areas within a city's sphere of influence, the city is the applicable planning jurisdiction; and, • For areas outside a city's sphere of influence, County is the applicable planning jurisdiction.	residential, commercial, parks and open space uses within this area, which the VESP provides. Consistent. The project site is within the City's SOI and once annexed would become part of the City of Chico.
2.10.4 Consistency Found Adequate For purposes of this standard, the proposal shall be deemed consistent if the proposed use is consistent with the applicable General Plan designation and text, the applicable General Plan is legally adequate and internally consistent, and the anticipated types of services to be provided are appropriate to the land use designated for the area. While LAFCO will ordinarily accept the finding of the planning jurisdiction as to consistency, LAFCO shall retain discretion to independently determine consistency where appropriate. LAFCO may require additional information, if necessary, particularly where the proposal involves an amendment to the General Plan of the applicable planning jurisdiction. (REVISED: May 4, 1996)	Consistent. The VESP has been designed consistent with the City's 2030 General Plan. The City's 2030 General Plan is a legally adequate planning document. The project's consistency with applicable general plan goals and policies as discussed in this chapter illustrates the specific plan's consistency with the general plan.
2.13 Agricultural and Open Space Land Conservation Among LAFCO's core purpose is the preservation of open space lands and prime agricultural lands. The Commission will exercise the powers to conserve prime agricultural land as defined in Section 56064 of the Government Code, open space land as defined in Section 65560 of the Government Code, and unique farmland and land of statewide importance defined in PRC 21060.1, pursuant to the following standards. In order to more effectively carry out this mandate, the Commission may develop local standards to define and identify prime agricultural and open space lands.	Consistent. The project site is designated by the California Department of Conservation as grazing land which is not a protected agricultural designation. The project designates approximately 672 acres for parks, preserves, and open space or 46% of the total project site.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
2.13.1 Conditions for Approval of Prime Agricultural/Open Space Land Conversion LAFCO will apply a heightened level of review when considering proposals for changes of organization or reorganization that are likely to result in the conversion of prime agricultural/open space land use to other uses. Only if the Commission finds that the proposal will lead to planned, orderly, and efficient development, will the Commission approve such a conversion. For purposes of this standard, a proposal leads to planned, orderly, and efficient development only if all of the following criteria are met: • The land subject to the change of organization or reorganization is contiguous to either lands developed with an urban use or lands within the sphere and designated for urban development; • The proposed development of the subject lands is consistent with the Sphere of Influence Plan, including the Municipal Service Review of the affected agency or agencies and the land subject to the change of organization is within the current 10-year Sphere of Influence boundary; • The land subject to the change of organization is likely to be developed within five years. In the case of very large developments, annexation should be phased wherever feasible. If the Commission finds phasing infeasible for specific reasons, it may approve annexation if all or a substantial portion of the subject land is likely to develop within a reasonable period of time; • Insufficient vacant non-prime or open space land exists within the existing agency boundaries or applicable 10-year Sphere of Influence that is planned and developable for the same general type of use; and, • The proposal will have no significant adverse effect on the physical and economic integrity of other agricultural/open space lands.	Consistent. The project site does not contain any land designated Prime, Unique, or Farmland of Statewide Importance. The project site is contiguous with developed lands in the City of Chico and also Butte County and is within the City's SOI. Buildout of the VESP is phased and anticipated to develop over a 20+ year horizon. Undeveloped lands to the east are designated grazing and consistent with the City's General Plan the VESP includes a setback to ensure there would be no incompatibility with adjacent grazing lands. The project would not result in an adverse effect on the physical and economic integrity of adjacent land designated for grazing.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
2.13.3 Finding with Respect to Alternative Sites The Commission will not make the affirmative findings that insufficient vacant non-prime or open space land exists within the Sphere of Influence Plan unless the applicable jurisdiction has identified within its Sphere of Influence all "prime agricultural land" and "open space land"; enacted measures to preserve prime agricultural/open space land identified within its Sphere of Influence for agricultural or open space use; and/or adopted as part of its General Plan specific measures to facilitate and encourage in-fill development as an alternative to the development of agricultural/open space lands.	Generally consistent. The City of Chico's General Plan EIR identifies all Prime Agricultural lands within the City's boundaries and the SOI (see General Plan EIR Figure 4.2-1 and Butte County General Plan Figure AG-1). Important farmland is located in the western portion of the City within the City limits. No important farmland is located in the City's SOI, which extends to the east of the City.
2.13.4 Determining Impact on Adjacent Agricultural/ Open Space Lands In making the determination whether conversion will adversely impact adjoining prime agricultural or open space lands, LAFCO will consider the following factors: • The agricultural/open space significance of the subject and adjacent areas relative to other agricultural/open space lands in the region; • The use of the subject and the adjacent areas; • Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent or nearby agricultural/open space land, or will be extended through or adjacent to any other agricultural/open space lands which lie between the project site and existing facilities; • Whether natural or man-made barriers serve to buffer adjacent or nearby agricultural/open space land from the effects of the proposed development; and, • Applicable provisions of the County's General Plan Agricultural Element, Open Space and Land Use Elements, applicable growth-management policies, or other statutory provisions designed to protect agriculture or open space. (Refer to www.buttecounty.net/ dds/planning,htm to locate Butte County's General Plan.)	Consistent. The project site is currently used for seasonal grazing. Due to the underlying lava cap and poor quality of the soils the site has not been actively farmed. Undeveloped lands to the east are under Williamson Act contracts and designated Agriculture under the Butte County General Plan. The VESP includes a 150 to 300-foot setback to ensure there would be no incompatibility with adjacent grazing lands. Adjacent land uses to the north and west include low density residential, or areas planned for residential and parks or open space uses. There are commercial areas located to the south. Public facilities required for the project would require the conversion of undeveloped/open space to accommodate the project. There are no man-made or natural barriers between the project site and undeveloped lands to the east. The VESP includes a setback between residential development and the adjacent undeveloped lands to the east. Policy AG-P5.3.3 in the Butte County General Plan requires a buffer be established on property proposed for residential development requiring discretionary approval in order to protect existing Williamson Act contracts The desired standard shall be 300 feet, but may be adjusted to address unusual circumstances. The project is requesting the site be annexed into the City so consistency with County policies is not required. However, the VESP includes a 300-foot setback along the eastern boundary of the project site, consistent with this policy.

Table 3-1 Consistency with Applicable Goals and Policies

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy 2016-2040	
4.1 General Standards for Annexation and Detachment These standards govern LAFCO determinations regarding annexations to and detachments from all agencies. The annexation or detachment must be consistent with the general policies set forth in these Policies and Procedures. [GC§56375(g)] 4.1.1 Consistency with Spheres and Municipal Service Reviews The annexation or detachment must be consistent with the sphere of influence. The annexation must also be consistent with the applicable Municipal Service Review. An annexation or detachment shall be approved only if the Municipal Service Review and the Sphere of Influence Plan of the affected agency(s) demonstrates that adequate services will be provided within the time frame needed by the inhabitants of the annexed or detached area. If a detachment occurs, the sphere will be modified. 4.1.2 Plan for Services Required Every proposal must include a Plan for Services that addresses the items identified in Section 56653 of the Government Code. This Plan for Service must be consistent with the Municipal Service Review of the agency. [GC§56375(h)].	Consistent. Annexation of the project site is consistent with the City's SOI and the City's SOI MSR completed as part of the City's 2030 General Plan and expansion of the City's sphere.

3.4 References

BCAG (Butte County Association of Governments). 2016. Butte County 2016 Regional Transportation plan/Sustainability Communities Strategy 2016-2040.

Butte County, 2018. Butte County Zoning Ordinance. Adopted November 2012. Amended April 2018.

Butte County. 2015. Zoning Districts, Land Uses, and Development Standards. Amended June 2015. Accessed January 22, 2020.

Butte County Local Area Formation Commission. 2010. Butte County LAFCO Policies and Procedures. May 6, 2010.

Butte County. 2010. Butte County General Plan 2030. Adopted October 26, 2010. Agricultural Element.

Butte County. 2019. Butte County General Plan 2030. Adopted October 2010. Updated November 2019.

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report. September 2010.

City of Chico. 2017. Chico 2030 General Plan. Adopted April 2011. Amended March 2017.

City of Chico. 2018. City of Chico Municipal Services Review and Sphere of Influence Plan. Adopted October 10, 2018.

4 Introduction to the Environmental Analysis

4.0 Scope of the EIR Analysis

This section of the Draft Environmental Impact Report (EIR) discusses the environmental and regulatory setting, impacts, and mitigation measures for each of the following technical issue areas (Sections 4.1 through 4.14):

- 4.1 Aesthetics
- 4.2 Air Quality
- 4.3 Biological Resources
- 4.4 Cultural and Tribal Resources
- 4.5 Energy
- 4.6 Geology and Soils
- 4.7 Greenhouse Gases
- 4.8 Hazards and Hazardous Materials
- 4.9 Hydrology, Water Quality, and Drainage
- 4.10 Noise and Vibration
- 4.11 Public Services and Recreation
- 4.12 Public Utilities
- 4.13 Transportation
- 4.14 Wildfire.

The Valley's Edge Specific Plan (proposed project or VESP) includes approximately 1,448 acres of land currently located in unincorporated Butte County (County), within the City of Chico's (City) Sphere of Influence (SOI). For the purposes of this EIR the VESP project site is referred to as "project site" or "plan area". These terms are used interchangeably throughout this document.

Implementation of the VESP must be consistent with the City's General Plan goals and policies, and all applicable regulations such as California Building Code standards. Therefore, such policies and standards are not identified as mitigation, and compliance with relevant goals, policies, and federal, state or City requirements are instead described within the impact analysis. In addition, the policies, actions, design guidelines and development standards set forth in the VESP and Development Agreement take precedence over the City's Municipal Code, except where the VESP is silent or specifically references the Municipal Code.

Technical Studies

A number of technical studies were prepared for the proposed project and are included in the technical appendices. Studies prepared include the results of the air quality and greenhouse gas CalEEMod Model outputs (Appendices B and F), numerous Biological Resource Assessments (Appendix C), Cultural Resources Report (Appendix D), Geotechnical Report (Appendix E), Phase I Environmental Site Assessment (Appendix G), Hydrology and Drainage Report (Appendix H), Water Supply Assessment (Appendix J), and a Traffic Impact Assessment (Appendix K).

Environmental Setting

According to subdivision (a) of Section 15125 of the California Environmental Quality Act (CEQA) Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project as they exist at the time when the Notice of Preparation (NOP) is published. This "environmental setting" will normally constitute the "baseline condition" against which project-related impacts are compared. Therefore, the baseline conditions for this EIR, unless noted otherwise, are based on conditions that existed in August/September 2019, when the NOP was published and circulated. The CEQA Guidelines recognize that the data for establishing an environmental baseline cannot be rigid. Because physical environmental conditions may vary over a range of time, the use of environmental baselines that differ from the date of the NOP is reasonable and appropriate in certain circumstances when doing so results in a more accurate or conservative environmental analysis.

The City of Chico 2030 General Plan Update EIR included an evaluation of proposed land use designations within the City's SOI, which included the proposed VESP area. The project applicant is requesting the project area be annexed into the City. Therefore, the EIR evaluates potential impacts consistent with the City's General Plan goals and policies, Municipal Code, and other city development requirements and standards.

Section Format

Each section begins with a description of the project's **environmental setting** and **regulatory setting** as it pertains to a particular issue.

The regulatory setting provides a summary of applicable federal, state, and local regulations, plans, policies, and laws that are relevant to each issue area. The regulatory setting also includes policies and actions included in the VESP because if and when the VESP is adopted these policies and actions will guide future development of the plan area. The regulatory setting description in each section is followed by a discussion of **project-level impacts**. The project-specific impacts discussion is followed by an analysis of the **cumulative impacts** of the project. The impact portion of each section includes an impact statement, prefaced by a number for ease of identification followed by an analysis of that impact and a determination of whether the impact would be significant (that is, exceed the applicable threshold) or less than significant (that is, below the applicable threshold). If a significant impact is identified, one or more mitigation measures are recommended, if available, to reduce the severity of the impact. All **mitigation measures** are identified at the end of each impact discussion. The degree to which the identified mitigation measure(s) would reduce the impact is also described. The project-level impact section is followed by an analysis of the cumulative impacts (see below).

In determining the level of significance of environmental impacts associated with the proposed project, the analysis in this Draft EIR assumes that the proposed project would comply with relevant federal and state laws and regulations, City General Plan policies, ordinances, other adopted City documents, and policies, actions, design guidelines and development standards contained in the VESP, unless otherwise noted. Therefore, such mandatory policies, ordinances, and standards are not identified as mitigation measures, but rather are discussed as part of the "Regulatory Setting" governing the proposed project and compliance with these requirements often mitigate potential impacts.

An example of an impact statement is shown below.

4.2-1: The proposed project could have a substantial adverse effect on a candidate, sensitive, or special-status species.

A discussion of potential impacts of the proposed project is presented in paragraph form. The impacts associated with construction and operation of the project are evaluated and compared to the threshold of significance for the particular impact. The analysis discusses the applicable local (including General Plan goals, policies, implementing actions, etc.), State, and federal laws and regulations/standards that would reduce impacts, and assumes that the project would comply with them. In many instances, the actions that are necessary to reduce a project impact are already required by compliance with existing laws or requirements. Further, it is assumed that the project applicant would obtain all necessary permits and comply with all required conditions of those permits. The applicable policies and actions included in the VESP are also provided, because if and when the VESP is adopted, these policies and actions would direct development and future buildout of all phases of the project. The impact analysis concludes with a determination of the impact's significance in **bold type** (e.g., **significant impact/significant and unavoidable impact/potentially significant impact/less-than-significant impact/results in no impact**).

Mitigation Measures

Following each impact analysis is a discussion of the applicable mitigation measures identified to reduce the significance of an impact, if required.

In Chapter 4, this section includes a statement indicating whether the mitigation measure will reduce the impact to a less-than-significant level. A discussion of how the mitigation would reduce the impact is included before the mitigation measure.

Mitigation measures, if applicable, are numbered and presented in the following format.

BIO-1: Statement of what, if any, mitigation measures are required.

Note that CEQA Guidelines, Section 15370, defines mitigation as:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- Compensating for the impact by replacing or providing substitute resources or environments.

In some instances, contribution of a project's fair-share to an established program provided there is a "reasonable plan for mitigation" and fair-share contributions are clearly designated to mitigate the impact are considered adequate mitigation for both project and cumulative impacts under CEQA.[1]

[1] See *Save Our Peninsula Com. v. Monterey County Bd. of Supervisors,* (2001) 87 Cal.App.4th 99, 141; and CEQA Guidelines, §15130, subd. (a)(3) ([recognizing that a project's contribution to a cumulative impact may be less than cumulatively considerable where "the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact"]). See also *Anderson First Coalition v. City of Anderson,* (2005) 130 Cal.App.4th 1173).

Cumulative Analysis

According to CEQA, "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the "project's incremental effect is cumulatively considerable" (CEQA Guidelines, Section 15130 (a)).

An analysis of cumulative impacts follows the evaluation of project impacts under existing conditions in each section in Chapter 4. As defined in CEQA Guidelines, Section 15355, cumulative impacts refer to two or more past, present and/or reasonably foreseeable future actions which, when considered together, result in a significant impact. The cumulative impacts analyze the extent to which the project would contribute to cumulative impacts, and whether that contribution would be considerable (i.e., would cause a cumulative condition to be significant and/or substantially increase the severity of a cumulative impact that would be significant whether or not the project was developed. An introductory statement that defines the cumulative analysis methodology and the cumulative context for respective sections (e.g., buildout of the City's General Plan, development within the Northern Sacramento Valley Air Basin) is at the beginning of the "Cumulative Analysis" discussion. In some instances, a project-specific impact may be considered less than significant, but would be considered potentially significant in combination with other development within the surrounding area. Or, in some instances, a potentially significant impact could result on a project level, but would not result in a cumulatively considerable impact. The cumulative impacts analysis is presented in the same format as the impacts section, shown above.

Terminology Used in the EIR

This Draft EIR uses the following terminology to describe environmental effects of the proposed project:

- **Standards of Significance:** A set of criteria used by the lead agency to determine at what level or "threshold" an impact would be considered significant. Standards of significance used in this EIR include those set forth in CEQA Guidelines Section 15065 (Mandatory Findings of Significance) and those derived from questions set forth in Appendix G to the CEQA Guidelines; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the City of Chico General Plan and other applicable planning documents. In fashioning criteria based on these sources, City staff and the EIR preparers have also relied on their own professional judgment and experience in some instances. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local regulations and ordinances.
- **Less-than-Significant Impact:** A project impact is considered less than significant when it does not reach the standard of significance, indicating that there would be no substantial change in the environment. No mitigation is required for less-than-significant impacts.
- **Potentially Significant Impact:** A potentially significant impact is an environmental effect that could cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- **Significant Impact:** 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 evaluation of project effects in the context of specified significance criteria. When available, potentially feasible mitigation measures and/or project alternatives are identified to reduce these effects to the environment.
- **Significant and Unavoidable Impact:** A project impact is considered significant and unavoidable if it results in a substantial adverse change in the physical conditions of the environment and there are no potentially feasible mitigation measures and/or project alternatives available to reduce these effects to less than significant.

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4.1 Aesthetics

4.1.0 Introduction

This section of the Draft EIR evaluates potential impacts on existing visual conditions, including scenic views, scenic resources, and lighting associated with implementation of the proposed Valley's Edge Specific Plan project (VESP or proposed project).

Scoping comments received in response to the Notice of Preparation (NOP) include concerns about impacts to the foothill viewshed and scenic vistas from development of the proposed project. These issues are addressed in this section. A copy of the NOP and comments received is included in Appendix A.

Sources used to prepare this section include aerial imagery, the General Plans for the City of Chico (City) and Butte County, the VESP, photos of the project site, Caltrans' list of Eligible and Officially Designated State Scenic Highways, and visual simulations prepared for the project.

4.1.1 Environmental Setting

Visual Character of the Surrounding Area

Butte County is located centrally in northern California in the northeastern part of the Sacramento Valley, extending into the northern Sierra Nevada mountain range. The County has three general topographical areas: the valley region, the foothills east of the valley, and the mountain region east of the foothills (Butte County 2019). The City is located primarily in the valley region at the westernmost part of the County. The valley is a wide, expansive plain including numerous croplands, nut and fruit orchards, and meadows for livestock grazing. Some areas of the city extend into the foothill region, where the valley meets the forest. This includes Bidwell Park, which spans 3,670 acres from west to east, elevating from approximately 200 feet above mean sea level (amsl) at Lower Bidwell Park to 1,600 feet amsl at the northeastern-most point of Upper Bidwell Park (City of Chico 2013a). Open space lands are predominant in northern and northeastern parts of the city, with some areas located centrally in the city along creeks and channels. The proposed project site is located in the foothill region in unincorporated Butte County, with on-site elevations gradually sloping higher heading eastward.

City of Chico

The City lies at the transition between the foothills to the east, and flat agricultural lands of the valley to the west. The valley floor has a gradual incline into the foothills, creating a smooth transition between flat land and mountainous terrain. Distinct neighborhoods help to define the urban boundary of the city. Older neighborhood areas are characterized by a grid street pattern, with neighborhoods of craftsman, bungalow, and ranch-style architecture, and large, mature trees (City of Chico 2010). Less mature trees, higher-volume arterial streets, curvilinear street patterns, and a greater mixture of architectural styles characterize newer residential areas, including areas in north and east Chico. Typical low-density residential areas consist of moderately sized, one- and two-story homes built along uniformly sized streets lined with trees. Medium-high density residential areas consist of low-rise apartment buildings, typically two-stories in height, along with townhouses and larger rentable homes. Homes are often constructed using stucco and/or panel exteriors

(City of Chico 2010). The most common street tree species in the City include non-native ornamental species such as Chinese Pistache, Crepe myrtle, and Black Walnut (City of Chico 2013b). Buildings in the downtown area include multi-story, mixed-use structures that provide a variety of shops, commercial services, and recreational amenities arranged in a grid street pattern (City of Chico 2017).

Unincorporated Butte County

Areas surrounding the proposed project site to the north, east and south consist primarily of single-family residential properties and agricultural uses in unincorporated Butte County. Across Skyway, there are parcels designated for industrial and office uses and include some existing industrial uses such as an asphalt production plant. The asphalt production plant contains large stockpiles of grey and black asphalt, storage and construction vehicles. There are no trees present to visually screen the asphalt production plant. A single-story golf shop and golf course is present to the south of the asphalt plant along skyway road and includes a paved parking lot, with numerous evergreen trees screening part of the golf shop, and green open space with see-through netting and large, mature trees along Skyway. Farther east, the foothills, ridges, and buttes gradually ascend into the Sierra Nevada Mountain range. Depending on the season, the rolling hills range in color from brown to green while the oak trees remain green, and evergreen trees become more present closer to the mountain range.

Visual Character and Quality of the Project Site

The proposed project site is located in the lower foothills of unincorporated Butte County, adjacent to the eastern city limits. The area is undeveloped and defined by blue oak trees in the valley areas with grasslands that are green during the early spring transitioning to shades of brown once the grasses die back across gentle ridgelines, and corridors of evergreen mixed oak and mixed oak woodlands along seasonal streams and along more sharply defined ridgelines, as shown in Figures 4.1-1 through 4.1-7. Honey Run Road runs along the entire southern boundary of the site, and approximately one-quarter mile of Skyway frontage exists along the southwestern corner of the project site. To the north, E. 20th Street (which connects with Bruce Road and State Route 99) provides access to the site. The Steve Harrison Memorial Bike Path, formerly Potter Road (Bike Path) forms the western boundary of the project site. Throughout the area including the project site, there are visually prominent rock walls from prior ranching uses that traverse the site, as shown in Figure 4.1-1. There are also distinctive bands of oak woodlands that traverse east-west through the site and are best depicted in an aerial as shown in Figure 4.1-2 (City of Chico 2010). Three double-sided billboard structures are located on the project site along Skyway. Various overhead high voltage transmission lines are located on the property and are visible from both Skyway and Honey Run Road (see Figure 4.1-3). An area in the southwest portion of the site contains the remnants of a former ranch including dilapidated barns, a house foundation, fencing, and corrals (see Figure 4.1-4). Two agricultural wells are also present on the project site. Seasonal creeks flow westward across the project site, as shown in Figure 4.1-5. Figures 4.1-6 and 4.1-7 show a broader, general view of the project site and its undeveloped nature including sloping topography, mixed oak vegetation, and the distinctive lava cap geology, which is visually represented by rocks present throughout the grassland areas.

FIGURE 4.1-1

Historic-era Rock Walls

Valley's Edge Specific Plan Project

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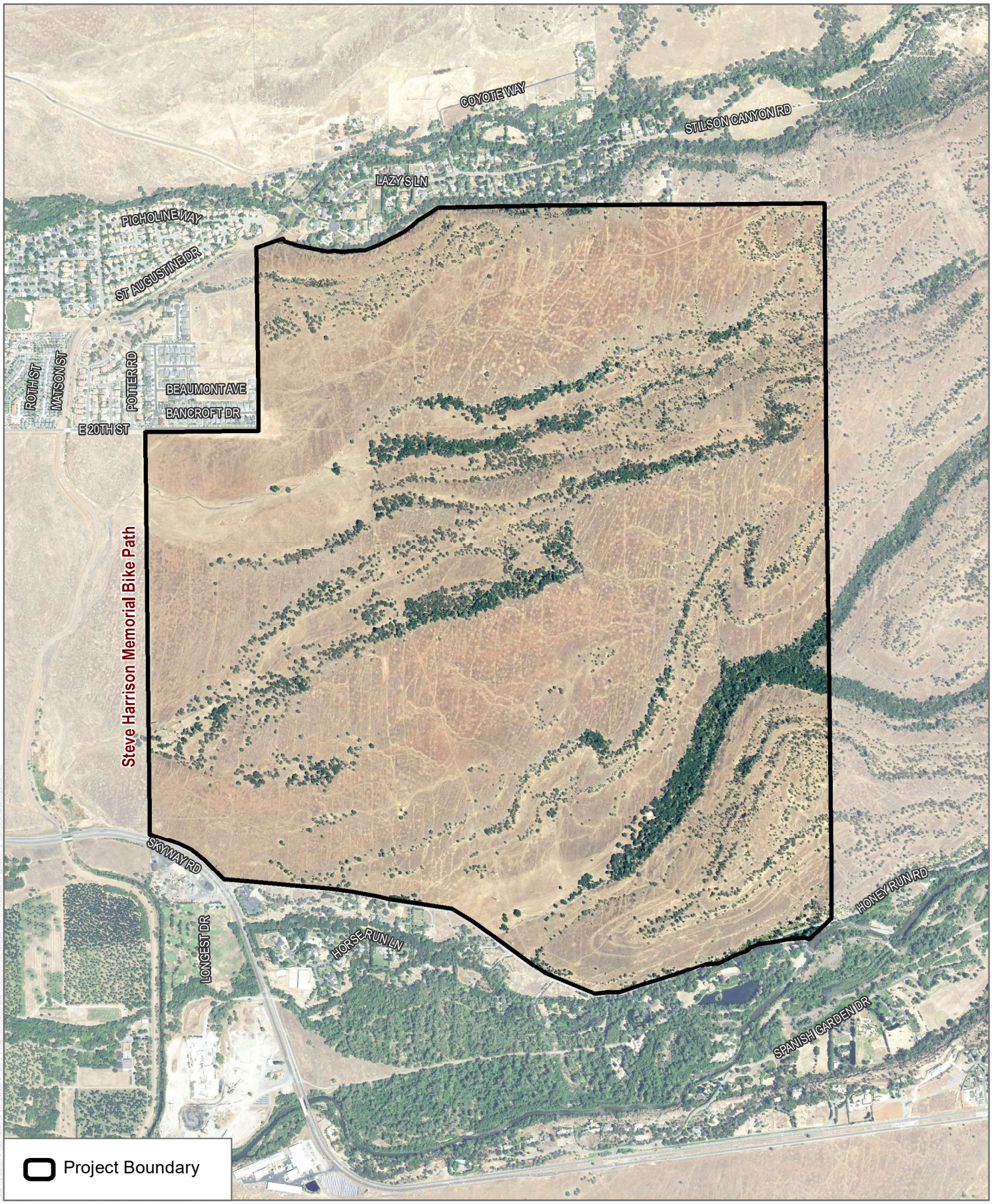

SOURCE: USDA 2016

DUDEK

0 750 1,500 Feet

FIGURE 4.1-2

Bands of Oak Woodlands

Valley's Edge Specific Plan Project

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FIGURE 4.1-3

Overhead Power Lines

Valley's Edge Specific Plan Project

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FIGURE 4.1-4

Remnants of Former Ranch

Valley's Edge Specific Plan Project

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FIGURE 4.1-5

Streams Within the Project Site

Valley's Edge Specific Plan Project

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FIGURE 4.1-6

General Landscape of the Project Site

Valley's Edge Specific Plan Project

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FIGURE 4.1-7

General Landscape of the Project Site

Valley's Edge Specific Plan Project

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Scenic Resources

There are no highways or roads within the city eligible for inclusion in the State Scenic Highway Program (Caltrans 2017). The General Plans for the City of Chico and Butte County provide some description of scenic views and/or scenic resources in the surrounding area. The Butte County General Plan identifies Butte Creek Canyon as a scenic resource, with portions of Skyway southeast of the City providing scenic views of its topographic and geologic features. Butte County has established a Scenic Highway (SH) overlay zone to preserve the aesthetic qualities of areas visible from roadways designated as scenic highways by the State or the Butte County Board of Supervisors. The SH overlay zone extends 350 lineal feet outward from the scenic highway right-of-way (Butte County 2015). The SH overlay zone includes areas of State Route 32 north of the project site, as well as Skyway beginning southeast of the city boundary and extending up to the Town of Paradise. The portion of Skyway within the SH overlay zone does not include the portion adjacent to the project site.

Scenic Views and Vistas

A scenic vista is a view that possesses visual and aesthetic qualities of high value to the community. Scenic vistas can provide views of natural features or significant structures and buildings. The rolling grasslands and unobstructed views of the site could be considered a scenic vista. According to the Chico General Plan Update Draft Environmental Impact Report (Draft EIR), scenic vistas for the City include views of the transition between landscapes (Sierra Nevada foothills to the east and the Central Valley to the west), the agricultural landscape, and the foothills and rising elevations to the east of Chico, major creeks, Bidwell Park, and views of City neighborhoods. Given the natural topography of the project site and surrounding land uses, public views of the surrounding foothills and the project site are primarily from adjacent roadways (including Bruce Road, E. 20th Street, and Skyway) in proximity to the site and the Bike Path. Public views of the surrounding foothills and the project site from Honey Run Road are limited due to the elevation of the road relative to the topography of the area and the mature trees and vegetation that generally block views looking north and east.

Views from the Project Site

Long-range views from the project site are possible only where topography and oak woodlands do not interfere. Looking eastward from some areas within the project site, this can include the upper foothills of the Sierra Nevada mountain range. Surrounding hillsides are visible only in areas of relatively flat topography that also lack the characteristic blue oak banding that span much of the project site. Short- to mid-range views from the northwest part of the project site include homes along E. 20th Street and Dawncrest Drive. Along the northern area of the project site, there are rural residential homes located along Lazy S Lane and Stilson Canyon Road to the north. However, due to the raised elevation of the project site as well as the oak woodland clear views of these homes is limited. Along the western side of the project site looking farther westward, the main view consists of undeveloped grassland with both oak trees and non-native ornamental trees from residential, commercial, and industrial developments farther in the distance. From the southwest looking toward Skyway, there are views of the Franklin Skyway Asphalt Plant which includes piles of asphalt, industrial vehicles, and large industrial equipment. Overhead power lines are visible along the project site and Skyway. Along the southern part of the project site looking farther south, the view consists of heavy oak tree canopy with few distant views along a downwardly sloping terrain. While residential homes exist to the south of the project site, they are not visible due to the heavy oak woodland and sloping topography.

Views of the Project Site

Looking east along E. 20th Street, from Dawncrest Drive, and from the field between Bruce Road and the Steve Harrison Memorial Bike Path, there are broad views of the project site which consists of undeveloped grassland dotted with rocks (lava cap) and oak trees spanning the distance, as shown in Figures 4.1-6 and 4.1-7. From Honey Run Road adjacent to the southern boundary of the proposed project site, the views facing northwest and northeast show a sloped, undeveloped grassland area with oak trees. Because of this sloped topography, motorists along most of Honey Run Road currently have limited views of the project site where new development is proposed. From Skyway, east of the Bike Path, there are views of existing overhead utility lines, oak woodland and grasslands, and standing billboards. A view of these overhead utility lines is shown in Figure 4.1-3. There are no public views of the project site from the east, as this land is not publicly accessible. The southwest area of the project site contains the remnants of a former ranch including dilapidated barns, a house foundation, and corrals, all visible from the Bike Path, as shown in Figure 4.1-4. Throughout the area there are historic-era rock walls from prior ranching uses also visible from adjacent roads and the Bike Path, shown in Figure 4.1-1.

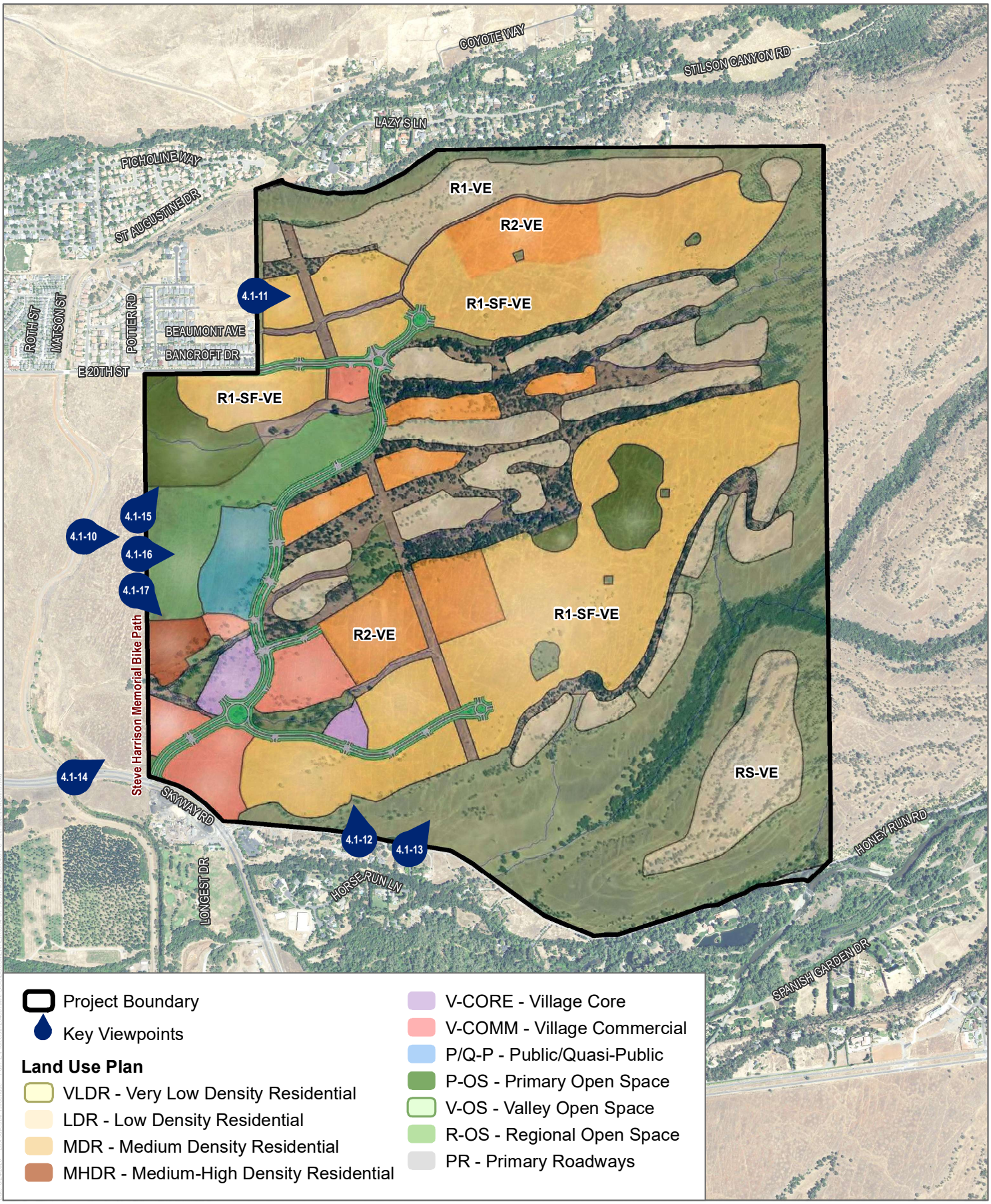
Public views of the project are limited to E. 20th Street/Doe Mill Road and Dawncrest Drive along the northern boundary, the Bike Path along the western boundary, and Skyway and Honey Run Road along the southern boundary. Figure 4.1-8 identifies the location of key public viewpoints that are analyzed in the impact analysis below under Impact 4.1-2.

Light and Glare

Nighttime lighting is necessary to provide and maintain a safe and secure environment. Light that falls beyond the intended area of illumination is referred to as "light trespass." Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the intended area, is typically caused by artificial lighting sources, such as from building security lighting, signs, parking lot lights, roadway lights, and stadium lights on playing fields. Spillover light can adversely affect light-sensitive uses (i.e., adjacent residences), by creating unwanted illumination.

Glare can result from sunlight or from artificial light reflecting off building exteriors, such as glass windows, metal roofs or other highly reflective surface materials. Squinting or turning away from a light source is an indication of glare. As the project site is undeveloped, it does not contain existing light or glare sources.

The City has typical urban light conditions contributed by overhead roadway lighting, commercial and residential buildings, and headlights from motor vehicles. These conditions contrast with the very low ambient nighttime illumination associated with undeveloped agricultural and rural lands surrounding the city, including the proposed project site. Nighttime light illumination and associated glare can be divided into stationary and mobile sources. Stationary sources of nighttime light include building lights, decorative landscape lighting, and streetlights. As the proposed project site is undeveloped, it has no source of light. In the immediate vicinity the primary source of nighttime light is headlights of motor vehicles traveling along Skyway, Honey Run Road and E. 20th Street, lights of bicycles along the Bike Path, lighting associated with the billboards along Skyway, and lights from the existing single-family residences located along E. 20th Street, Doe Mill Road, and Dawncrest Drive. Similar light sources are also present, to a lesser extent, south of Honey Run Road, which has single-family homes built at a lower density. During nighttime hours, ambient light can be accentuated during periods of low cloudiness or fog, which reflects and intensifies the amount of light.



SOURCE: USDA 2016

DUDEK

0 750 1,500 Feet

FIGURE 4.1-8

Key Public Viewpoints Map

Valley's Edge Specific Plan Project

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4.1.2 Regulatory Setting

Federal Regulations

There are no federal regulations regarding aesthetics applicable to the proposed project.

State Regulations

State Scenic Highway Program

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program detailed in Streets and Highways Code Section 260. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. There are no highways or roads within the City or in the vicinity of the project site that are eligible for inclusion in the State Scenic Highway Program (Caltrans 2017).

Nighttime Sky – Title 24 Outdoor Lighting Standards

The California legislature passed a bill in 2001 requiring the California Energy Commission (CEC) to adopt energy efficiency standards for outdoor lighting for both the public and private sector. The most recent 2019 update to Title 24, Parts 1 and 6, includes requirements for outdoor lighting for residential and nonresidential development to help to reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off (CEC 2018).

Local Regulations

Chico Municipal Code Land Use and Development Regulations (Title 19)

The City's Land Use Regulations provide guidance for future development to ensure consistency and compatibility with the City's existing character. The VESP includes its own design guidelines and development standards (described below); however, the City's requirements are also provided. The land use, development, and regulations of the VESP and Development Agreement take precedence over the City's Municipal Code, except where the VESP is silent or references the Municipal Code.

Chapter 19.18

Chapter 19.18 of the Municipal Code requires design review of all non-residential and multi-family residential projects. Projects defined or determined to be "major" require review by the City's Architectural Review and Historic Preservation Board (ARHPB), and "minor" projects are handled administratively by the Community Development Director or designee. City review under CMC 19.18 is intended to promote a visual environment of high aesthetic quality. The Chico ARHPB promotes responsible architectural design, which is consistent with Chico's character by applying adopted design guidelines and policy direction from any applicable specific plan or neighborhood plan. The Architectural Review and Historic Preservation Board reviews project site plans, architectural renderings, and landscaping and lighting details, which are required to be submitted and approved in advance of the related building permit application.

Section 19.60.050

Section 19.60.050 of the Municipal Code requires that exterior lighting be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections are confined within the boundaries of the site to the maximum extent feasible. Exterior lighting is to be directed downward and away from adjacent properties and public rights-of-way. This section does not apply to sign illumination, traffic safety lighting, or public street lighting. Permanently installed lighting cannot blink, flash, or be of unusually high intensity or brightness. All lighting fixtures must be appropriate in scale, intensity, and height to the use they are serving.

Section 19.52.100

Section 19.52.100 of the Municipal Code provides for development standards for development within the City's foothill areas to preserve and enhance natural topographic features and reduce environmental degradation from grading and erosion. This includes:

1. Structure Height. Height shall be measured as the vertical distance to an imaginary plane located above the natural (pre-development) grade. The height limit in the -FD overlay zone is 25 feet, with an allowance of up to 5 additional feet for chimneys, vents, other projecting architectural features, water tanks, and renewable energy devices. Heights less than 25 feet may be required along ridgelines and where prominently visible from public rights-of-way, parks, and other public spaces. Heights up to 35 feet may be allowed if the additional height does not impact public viewsheds.
2. Height measurement on downhill lot. Where the average slope of a parcel is greater than a 1-foot rise or fall in 7 feet of distance from the street elevation at the property line, one story shall be allowed on the downhill side of any structure in addition to the height allowed by the applicable zoning district; provided that the height of the structure shall not be increased above the limit established by the zoning district, measured from the finished street grade to the top of the roof.
3. Setbacks Between Structures and Toes/Tops of Slopes.
    a. On adjacent lots having a difference in finished grade elevation of 3 feet or more, the side yard shall be measured from the toe or top of slope to any structure, whichever is nearer.
    b. On adjacent lots having a difference in finished grade elevation of 6 feet or more, the minimum distance between the toe or top of the slope, whichever is nearer, and any main structure shall be 15 feet.
    c. The grading standards of Title 16 R (Building Standards) shall also apply and may result in greater setback requirements.
4. Clustered Development. In clustered development, dwelling units shall be grouped on more level or gently sloping terrain so as to reduce grading alterations on steeper slopes that shall be preserved in a natural state.
5. Maximum Density Calculation. To retain the natural features of hillsides, densities shall be reduced as slope increases. Each property to be developed shall be divided into cells of similar slope, using the average slope ranges listed in Table 4-16. The maximum density of the base zoning is then multiplied by the relevant reduction factor assigned to each cell to determine the maximum allowable density for each cell.

6. Exterior Lighting. Lighting for new project sites and new streets shall be shielded to avoid glare and the spill of light to surrounding areas. Street lighting shall consist of multiple, shielded, low-intensity, pedestrian-scale lighting fixtures instead of fewer, taller fixtures.
7. Retaining Walls. Large retaining walls shall be broken into elements and terraces to avoid creating a uniform plane and landscaped to screen them from view
8. Street Design.
    a. Street Layout. Streets shall follow the natural contours of the terrain, where possible, to minimize the need for grading. Cul-de-sacs and loop roads should be used where necessary to fit the natural contours and topography, subject to the approval of the City Engineer and Fire Department.
    b. Reduced Street Widths. Streets may be designed without parking lanes when the result is a substantial decrease in cutting and/or filling. Streets may be reduced as provided for in Title 18R, Design Criteria and Improvement Standards.
9. Site and Structure Design. Site and structure design shall visually blend structures with the surrounding terrain.
    a. Lot Line Locations. Lot lines should be placed at the top of slope areas.
    b. Location of Structures. Structures should be sited in a manner that will:
        i) Minimize the creation of flat pads by using compact, split-level designs;
        ii) Preserve vistas from public places; and
        iii) Preserve visually significant rock outcroppings, natural hydrology, native plant materials, and areas of visual significance.
    c. Architectural Design. Buildings shall demonstrate the following design principles:
        i) Building scale that complements the character of the foothills and avoids massive forms that dominate public views of the foothills.
        ii) Varying setbacks, building heights, foundation designs, building forms, materials, and colors that blend structures into the terrain.
        iii) Building facades with varied planes and overhangs as a means to create changing shadow lines that further break up massive forms.
        iv) Incorporation of single story elements, setbacks, roof pitches, and landscaping for wall surfaces facing public viewsheds.
        v) Roof pitches placed to generally follow the angle of the slope, but with variation to avoid a monotonous appearance.
        vi) Medium to dark earth tone colors used for building elevations and roof materials.
        vii) Surface materials to blend with the landscaping and natural vegetation, such as textured stucco, wood, natural brick, and coarse block.
        viii) Rough-textured roof materials (and in some cases terra cotta and metal) in a muted, darker tone, including browns, grays and greens.
10. Grading and Drainage.
    a. Grading shall be designed to conserve natural topographic features and appearances by retaining major natural topographic features (for example, canyons, knolls, ridgelines, and prominent landmarks), by minimizing the amount of cut and fill, and by means of landform grading to blend graded slopes and benches with the natural topography

b. Grading plans shall identify slopes that are to be landform graded. "Landform grading" shall mean a contour grading method that creates artificial slopes with curves and varying slope ratios in the horizontal plane designed to simulate the appearance of surrounding natural terrain.
c. All graded areas shall be protected from wind and water erosion, in compliance Titles 16 (Buildings and Construction) and 16R (Building Standards). Interim erosion control plans, certified by the project engineer, shall be required.
d. Exposed slopes shall be replanted with non-invasive but self-sufficient trees, shrubs, and groundcover that are compatible with existing surrounding vegetation, to help blend manufactured and natural slopes and to protect slopes from soil erosion.
e. Grading that would create a slope exceeding a ratio of 3:1 requires a report and a stabilization study that indicates a greater permissible slope, unless it is determined by the Director that site conditions (as supported by data) do not warrant the report and study.

City of Chico 2030 General Plan

The City's 2030 General Plan includes the following goals, policies, and actions related to aesthetics and visual quality (City of Chico 2017). The VESP was prepared consistent with the goals, policies and actions of the City's 2030 General Plan.

Land Use Element

Goal LU-1: Reinforce the City's compact urban form, establish urban growth limits, and manage where and how growth and conservation will occur.

Policy LU-1.2 (Growth Boundaries/Limits) – Maintain long-term boundaries between urban and agricultural uses in the west and between urban uses and the foothills in the east, and limit expansion north and south to produce a compact urban form.

Action LU-1.2.2 (Foothill Development) – Apply the City's Foothill Development Standards to projects in foothill areas.

Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.

Policy LU-2.4 (Land Use Compatibility) – Promote land use compatibility through use restrictions, development standards, and special design considerations.

Policy LU-2.5 (Open Space and Resource Conservation) – Protect open space areas with known sensitive resources.

Policy LU-2.6 (Agricultural Buffers) – Require buffering for new urban uses along the City's Sphere of Influence adjacent to commercial crop production. Landscaping, trails, gardens, solar arrays, and open space uses are permitted within the buffer. Design criteria for buffers are as follows:

- A minimum 100-foot-wide physical separation, which may include roadways and creeks, between the agricultural use and any habitable structure.
- Incorporate vegetation, as may be needed to provide a visual, noise, and air quality buffer.

Goal LU-6: Comprehensively plan the Special Planning Areas to meet the City's housing and jobs needs.

Policy LU-6.2 (Special Planning Area Implementation) – Allow flexibility when planning the Special Planning Areas in order to meet changing community housing and jobs needs.

Action LU-6.2.4 (Doe Mill/Honey Run SPA Planning) – Plan the Doe Mill/Honey Run SPA with a broad range of housing types and densities integrated with open space and recreational areas, supporting commercial services, and public facilities. Subsequent planning will:

- Address circulation with primary connections to the site via Skyway and E. 20th Street.
- Incorporate accessible open space on the eastern portion of the SPA, a community park, as well as neighborhood and mini parks.
- Maintain open space by clustering development and providing open space buffers on the northern, eastern, and southern edges of the SPA.
- Include visual simulations to ensure that development is not visually intrusive as viewed from lower elevations.
- Incorporate special lighting standards to reduce impacts on the nighttime sky.
- Address wildland fire considerations.

Community Design Element

Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.

Policy CD-1.1 (Natural Features and Cultural Resources) – Reinforce the City's positive and distinctive image by recognizing and enhancing the natural features of the City and protecting cultural and historic resources.

Action CD-1.1.1 (Highlight Features and Resources) – Incorporate and highlight natural features such as scenic vistas, creeks, and trees, as well as cultural resources such as rock walls, into project design.

Action CD-1.1.2 (Landscape Improvement) – Emphasize landscaping as a fundamental design component, retaining mature landscaping when appropriate, to reinforce a sense of the natural environment and to maintain an establish appearance.

Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.

Policy CD-2.1 (Walkable Grid and Creek Access) – Reinforce a walkable grid street layout and provide linkages to creeks and other open spaces.

Action CD-2.1.4 (Creek Views and Access) – As part of the design review of development and capital projects, improve visual and recreational public access to creeks.

Policy CD-2.4 (Context Sensitive Foothill Development) – Protect viewsheds from foothill development, through the careful location and design of roads, buildings, lighting, landscaping, and other infrastructure.

Action CD-2.4.1 (Protection of Foothill Viewshed) – Design and blend foothill development with the surrounding landscape and topography to diminish its visual prominence from the valley floor.

Action CD-2.4.2 (Foothill Light Levels) – Design low light levels in foothill settings to optimize views of dark skies and minimize light pollution.

Action CD-2.4.5 (Contours of Natural Slope) – Limit the extent and amount of grading in foothill areas, and where grading occurs, emulate the contours of the natural slope.

Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.

Policy CD-3.1 (Lasting Design and Materials) – Promote architectural design that exhibits timeless character and is constructed with high quality materials.

Goal CD-4: Maintain and enhance the character of Chico's diverse neighborhoods.

Policy CD-4.1 (Distinctive Character) – Reinforce the distinctive character of neighborhoods with design elements reflected in the streetscape, landmarks, public art, and natural amenities.

Action CD-4.1.1 (Neighborhood Design Details) – Develop and implement neighborhood plans that identify design qualities and elements for specific areas.

Parks, Public Facilities and Services Element

Goal PPFS-2: Utilize creeks, greenways and preserves as a framework for a system of open space.

Policy PPFS-2.1.1 (Use of Creeks and Greenways) – Utilize the City's creeks, greenways and other open spaces for public access, habitat protection, and to enhance community connectivity.

Action PPFS-2.1.2 (Creekside Design) – Continue to use Chico's Design Guidelines Manual for proposed development adjacent to creeks to address setbacks, building orientation, security measures, and lighting designed to promote the City's creeks and amenities without detracting from the natural setting.

Action PPFS-2.1.4 (Assess Potential Impacts to Creeks) – Through the development and environmental review processes, including consultation with state and federal agencies, ensure that natural areas and habitats located in and along the City's creeks are protected and enhanced.

Open Space and Environment Element

Goal OS-2: Connect the community with a network of protected and maintained open space and Creekside greenways to build knowledge and appreciation of these resources.

Policy OS-2.4 (Foothill Viewshed) – Preserve the foothills as a natural backdrop to the urban form.

Action OS-2.4.1 (Visual Simulations) – Require visual simulations for foothill development to assess viewshed impacts.

Valley's Edge Specific Plan

The VESP policies and actions listed below would direct development and future buildout of all phases of the project. The VESP goals, policies, and actions related to aesthetics and visual quality include the following:

Chapter 2 Guiding Goals and Principles

Section 2.3.2 Chapter 4: Land Use

Goal LU-3: Create Distinctive Form and Character: Create a distinctive character for the plan area by allowing natural landscapes features to define urban edges, by using trees, landscaping, fencing, and architectural guidelines to unify the community, by enabling way-finding features, entry features, and gateways to promote sense of place and arrival to Chico and the VESP planning area.

> **Action LU-3.1 –** Create a master land use plan which enables open space to be the predominant land use, preserving notable natural land forms and features and enabling park-like settings of the natural environment to define and surround the limits of development.
>
> **Action LU-3.2 –** Facilitate wayfinding by integrating informational signage and kiosks along trails, parks and public gathering places, and by incorporating landmark features at entries to residential villages.
>
> **Action LU-3.3 –** Develop common landscape architecture themes and guidelines that unify the streetscape and projects within the plan area.
>
> **Action LU-3.4 –** Provide opportunities for public art in high visibility locations such as the social gathering places and roundabouts.
>
> **Action LU-3.5 –** Capitalize on opportunities to integrate dramatic natural landscapes as "Third Place" destinations. Locate commercial areas along Skyway frontage to establish a clear urban edge, and designate land abutting Honey Run Road as open space to buffer commercial and residential areas.
>
> **Action LU-3.6 –** Create a sense of arrival to Chico and to the VESP plan area by installing monumentation signage along the primary Skyway entry, and the secondary entry along East 20th Street.

Goal LU-4: Minimize Visual Impacts: Minimize visual impacts by utilizing natural open space, parks, fields and buffers to define and soften foreground viewsheds, locate commercial and multi-family land uses to lower elevation areas, and adopt landscape, architectural and lighting standards and guidelines to diminish visual prominence of development from the valley floor.

> **Action LU-4.1 –** Master plan open space along Honey Run Road to preserve immediate foreground views and eastward valley to lower foothill views.
>
> **Action LU-4.2 –** Locate visually soft and green elements such as parks, preserves and public facilities along the western boundary of the plan area to preserve and soften immediate foreground views.

Action LU-4.3 – Create an open space buffer and building setbacks along the entire northern boundary in such a manner as to minimize the visual impact to Stilson Canyon homes abutting the VESP plan area.

Action LU-4.4 – Minimize light pollution by eliminating streetlights where not necessary for public and personal safety, and by employing dark sky best practices and fixtures such as maximum hardscape lighting of approximately .030 W/Ft2 (except for high security areas).

Action LU-4.5 – Implement and enforce area wide Valley's Edge Design Guidelines to ensure building massing, building materials, color schemes and placement softens visual impacts in a manner responsive to the underlying intent of the Foothill Development Overlay.

Design Guidelines and Development Standards

The purpose of the VESP Design Guidelines is to provide tools to evaluate projects beyond the regulatory requirements contained in the objectives, policies, and standards contained in the VESP. These guidelines were developed to promote quality design and construction, protect the existing site character, environment, as well as ensure proposed improvements are compatible with the characteristics of the community. The VESP includes guidelines related to architectural, residential, non-residential, landscape architecture, and general design. These design guidelines address the physical attributes of community design, ranging from building placement to the building architecture itself. To remain consistent with the landscape, design elements shall include natural materials, such as stone boulders. Architectural styles would include rustic, Ranch, Agrarian/Barn, Spanish Revival, and California Mission, as well as modern and contemporary interpretations of those styles. The VESP Design Guidelines are directory, not mandatory, in their wording.

The Design Guidelines may be interpreted with some flexibility in their application to specific projects. A Design Review Committee (DRC) would be created to review plans for development. DRC responsibilities would include the review, approval, conditional approval, or denial of site plans, building plans, elevations, materials, colors, fencing, signage, lighting, landscaping, and parking arrangements prior to building permit and submittal. Once approved by the Valley's Edge DRC, plans would be submitted to City planning staff for concurrence review. The proposed VESP design review process would replace the typical City design review process established by Chapter 19.18 of the Municipal Code.

4.1.3 Impacts and Mitigation Measures

Methods of Analysis

The value attached to changes in visual character is largely subjective. For this EIR, the determination of when changes to the visual environment become a substantial adverse effect is based on the following primary factors: (a) the existing scenic quality of an area; (b) the level of viewer exposure and concern regarding visual change; and (c) the level of actual visual change caused by the project as seen by a given viewer group. The overall visual sensitivity is first established based on existing visual quality, viewer exposure, and viewer concern. These factors are then considered together with the level of expected visual change or contrast and significance. Visual change is an overall measure of the alteration or change in basic visual attributes such as form, line, color, and texture as a result of the proposed project. Thus, a substantial adverse effect can occur when a project results in high levels of visual change or quality of public views from publicly accessible areas.

If agency policy does not protect private views, a project's impacts to private views are not required to be evaluated under CEQA (See *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477). The most recent update to the CEQA Guidelines also clarifies that public views "are those that are experienced from a publicly accessible vantage point." (CEQA Guidelines Appendix G).

Sources referenced to prepare this section include photographs of the project site, aerial imagery, the General Plans for the City and Butte County, the VESP, and information from the City. In addition, visual simulations were prepared for the project to show how the existing character of the project site would change with implementation of the project. This analysis assumes that the proposed project would be consistent with the City's General Plan goals and policies, the VESP actions and all applicable design guidelines and development standards; therefore, such policies and standards would not specifically be identified as mitigation, but are discussed in the impact analysis.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those experienced from publicly accessible vantage point). In urbanized areas, would the project conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Significance Threshold Criteria Not Applicable to the Proposed Project

State Scenic Highway

There are no highways or roads within the City eligible for inclusion in the State Scenic Highway Program (Caltrans 2017). The proposed project does not include and is not located adjacent to any locally designated scenic highways or scenic roadways identified in the Chico General Plan or Butte County General Plan. Thus, there would be no impact to any scenic resources within a state scenic highway and this issue is not further addressed.

Project Impacts

4.1-1 The proposed project could adversely affect a scenic vista.

A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. According to the City's 2030 General Plan EIR, scenic vistas include views of the transition between landscapes (Sierra Nevada foothills to the east and the Central Valley to the west), the agricultural landscape, and the foothills and rising elevations to the east of the city, the major creeks, Bidwell Park, and views of City neighborhoods (City of Chico 2010, p. 4.13-12).

The proposed project would introduce new housing and commercial development into an undisturbed, undeveloped environment. Due to the location of the project site at the edge of the city limits it provides public views of the transition from the valley to the Sierra Nevada foothills to the east from adjacent roadways and the Bike Path. Public views of the project site from adjacent areas and roadways looking to the east include expansive views of grasslands, trees, and rolling hillsides that represent a scenic vista. After development of the project, public views from E. 20th Street, Skyway and the Bike Path would include buildings in shades of green or beige with brown or black roofs, wood fences in shades of brown, with a mix if deciduous and evergreen trees. Areas of green turf as part of the Community Park would also be visible from the Bike Path (shown in Figures 4.1-9 through 4.1-17). The VESP includes policies and Design Guidelines which promote building designs that reduce viewshed impacts, and General Plan Policy OS-2.4 which strives to preserve the foothills as a natural backdrop to the urban form to minimize changes to the scenic vista. The 2030 General Plan includes Action CD-1.1.1 to incorporate and highlight natural features such as scenic vistas, creeks, and trees, as well as cultural resources such as rock walls, into project design. The VESP Foothill Development Standards include requirements that homes not be located on top of a ridge or hilltop to minimize potential view impacts; use of terracing or a tiered/split level design to minimize grading and reduce the building's mass and visibility; limit steep roof pitches to minimize building heights and roof-lines; and a color palette that uses earth tones to blend into the existing environment. Generally, the intent of the VESP is to minimize change to site topography and to blend new development into the natural land forms. This also includes guidance to preserve native landscaping including streams, rock outcroppings, trees, and other plants (VESP 2021, Ch. 4).

The City's 2030 General Plan EIR determined that implementation of the proposed General Plan, which included the Doe Mill/Honey Run Special Planning Area (SPA), could have a substantial effect on a scenic vista. However, the EIR concluded that implementation of proposed General Plan policy provisions and continued implementation of the City's Municipal Code, including Chapter 19.52.100 which requires compliance with the City's Foothill Development Standards, would ensure that no adverse impact to a scenic vista would occur. In the General Plan EIR, the Land Use Element contains specific policies related to individual SPAs that direct the subsequent master planning efforts to address viewshed, context sensitive design, and nighttime lighting considerations associated with new development. Future development projects would be subject to review by the VESP's Design Review Committee (DRC) in coordination with City staff for conformance to the VESP's Design Guidelines (VESP 2021, Appendix A).

The City identifies a scenic vista as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The introduction of a developed environment with roads and buildings would change the existing expansive views of the project site that currently represent an undeveloped natural landscape that provides a visual backdrop to the transition between the valley floor and the foothills. However, as stated in the General Plan EIR, compliance with the City's Municipal Code and Foothill Development Standards would reduce this impact to less than significant. The proposed project would be subject to the VESP Development Standards and Design Guidelines that have been developed consistent with the General Plan goals, policies and actions as well as the City's Municipal Code, where applicable. The land use, and development guidelines set forth in the VESP would take precedence over the City's Municipal Code, except where the VESP is silent or references the Municipal Code. Because the project has been designed in consideration of the guidance set forth in the General Plan including Policy LU-1.2 related to foothill development standards, Policy OS-2.4 which strives to preserve the foothills as a natural backdrop to the urban form to minimize changes to scenic vistas, and Action CD-1.1.1 to incorporate and highlight natural features into project design, the project's impact on a scenic vista would be considered a **less-than-significant impact**.

Mitigation Measures

No mitigation measures are required.

4.1-2 The proposed project could degrade the existing visual character or quality of public views of the site and its surroundings.

The 2030 General Plan EIR determined that while the City's proposed and existing policy and regulatory framework would be effective in reducing the aesthetic impact of new development in the foothills, any new development in these areas would be in contrast to the existing, undeveloped conditions that provide a natural visual backdrop to the city. Therefore, this impact was considered significant and unavoidable. However, the VESP includes a process where future development projects would be subject to review by the VESP's DRC in coordination with City staff for conformance to the VESP's Design Guidelines. The VESP's DRC responsibilities would include the review, approval, conditional approval, or denial of site plans, building plans, elevations, materials, colors, fencing, signage, lighting, landscaping, and parking arrangements prior to building permit and submittal. Once approved by the DRC, plans would be submitted to City planning staff for review to ensure that the VESP would not degrade visual character or quality of public views.

The proposed project site is located in the lower foothills of unincorporated Butte County and is primarily defined by groves of blue oaks and other trees in valley areas and large grassland areas across gentle hills and ridgelines. Throughout the area including the project site, rock walls from prior ranching uses are visible along with rocks (lava cap) dotting the grassland areas. Three double-sided billboard structures are located on the project site along Skyway. Various overhead high voltage transmission lines are also located on the property and are visible from both Skyway and Honey Run Road. An area in the southwest portion of the site contains the remnants of a former ranch.

Implementation of the proposed project would result in the development of land uses that are similar to the land uses found adjacent to and generally in the vicinity of the project site to the north, west, and south. Project development would result in very low and low density residential areas around the perimeter of the project site, medium density residential toward the center of the project site, medium high density at the edge of the project site near the Bike Path, and commercial and office uses along Skyway. The massing, height, and architectural style of the proposed homes and the associated landscaping would be similar to that found in the neighborhood along E. 20th Street.

General Plan Policy LU-6.2 and Action LU-6.2.4 require preparation of visual simulations to ensure that development is not visually intrusive when viewed from lower elevations. Consistent with this action, visual simulations were prepared for the project to illustrate how future development would affect public views of the site. The visual simulations illustrate how public views could be affected by the project due to the introduction of new buildings into the area. A description of these viewpoints is included in the discussion below and the location of viewpoints is provided on Figure 4.1-8. These viewpoints include public views of the project site from adjacent roadways, the Bike Path, and a public park to be developed as part of the adjacent recently approved Stonegate residential subdivision project.

As shown in Figure 4.1-9a, the view looking eastward from E. 20th Street currently includes fairly open and expansive views of grasslands to the south, and residential development on the north side of the street. The Bike Path is visible in the distance. The proposed project would change the visual character of this view by adding residential development to the viewshed, as shown in Figure 4.1-9b. The massing, height and architectural style of the proposed homes would be similar to the existing homes along E. 20th Street. While new residential development would be visible in the distance, the foreground view would continue to be of the grassland areas due to the large nature preserve.

As shown in Figure 4.1-10a, the view looking eastward from the site of a future public park between Bruce Road and the Bike Path currently includes uninterrupted views of undeveloped grassland and mature oak trees spanning the horizon. Two visual simulations were prepared: one with fully mature trees at project completion (Figure 4.1-10b), and another showing what it would look like before the project's landscaping matures (Figure 4.1-10c). The view immediately after project construction reveals a distant view of recreational fields and buildings as part of the proposed community park. It is likely that public views would resemble this viewshed until the trees are fully matured. When mature, the trees around the perimeter of the recreational fields would largely block views of the proposed buildings, but views of the buildings would continue to be visible through the trees.

As shown in Figure 4.1-11a, the view looking eastward from Dawncrest Drive currently consists of a rock wall in the foreground and largely undeveloped grassland with various shrubs spanning the distance. Oak woodland is visible closer to the horizon. As part of the VESP, low-density residential development is proposed in this area. A proposed trail[1] and a wood fence would limit views of the lower portions of new houses, but the upper portions of walls and roofs would be visible above the fence (see Figure 4.1-11b). Ultimately, the project's landscaping would partially screen views of VESP homes, with fully mature trees in back yards standing taller than the proposed homes, as shown in Figure 4.1-11c. However, the fence and roof tops would be a permanent alteration in views from this location.

As shown in Figures 4.1-12a and 4.1-13a, current views located along Honey Run Road looking northwest and northeast include grassland, scattered rocks, and mature oak trees. Because of the sloped topography of the grassland in which the elevation climbs higher as views become more distant, the proposed project would not dominate views in these areas. Looking northwest from Honey Run Road, only the rooftops of houses would be visible over the top of the hill along with oak trees, as shown in Figure 4.1-12b. Looking northeast from Honey Run Road, development would be slightly more intense and visible, including a wood fence that would extend the length of the project in this area, as shown in Figure 4.1-13b. New and existing trees would screen some of these views into the VESP planning area helping to reduce the change in visual character, as shown in Figures 4.1-12c and 4.1-13c.

As shown in Figure 4.1-14a, the view looking northeast from Skyway includes limited views of the project site. Currently, there are views of existing grasslands, overhead utility lines and distant oak trees. The project would introduce new commercial buildings that would be visible at roughly the same height as the oak trees, as shown in Figure 4.1-14b. Overall, the visual character of the viewpoint would be changed by the project. The commercial structures would alter the existing quality of the public view, which currently consists of undeveloped land with overhead utility lines, and billboards.

As shown in Figures 4.1-15a, 4.1-16a, and 4.1-17a from the midway point of the Bike Path, distant rolling hills and oak trees currently span nearly the entire view. The community park is proposed along this section of the Bike Path. Views of the project would include new multi-use recreation fields, field seating areas, and group picnic areas and a restroom building (see Figures 4.1-15b, 4.1-16b, and 4.1-17b). Figures 4.1-15c, 4.1-16c, and 4.1-17c, illustrate what the park uses would look like at full project buildout with mature trees. As shown, project buildings would be largely screened. The picnic area and restroom building would be the most visible and would not be screened by new or existing trees. The restroom building would be a similar height as the trees and would be painted natural colors to be less visually prominent. Turf would be visible in the foreground that would replace the grasslands dotted with rocks.

[1] In the VESP, enhanced trails are defined as trails improved with hardened natural surfaces such as gravel or decomposed granite. There are approximately 4 miles of enhanced trails within the VESP.

Current View Looking East from E. 20th Street

Anticipated View Looking East from E. 20th Street

SOURCE: rga 2020

FIGURE 4.1-9

View Looking East from E. 20th Street

Valley's Edge Specific Plan Project

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Current View Looking East from Field Between Bruce Road and Steve Harrison Memorial Bike Path

Anticipated View Looking East from Field Between Bruce Road and Steve Harrison Memorial Bike Path (Immature Trees)

Anticipated View Looking East from Field Between Bruce Road and Steve Harrison Memorial Bike Path (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-10

View Looking East from Field Between Bruce Road and Steve Harrison Memorial Bike Path

Valley's Edge Specific Plan Project

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Current View Looking East from Dawncrest Drive

Anticipated View Looking East from Dawncrest Drive (Immature Trees)

Anticipated View Looking East from Dawncrest Drive (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-11

View Looking East from Dawncrest Drive

Valley's Edge Specific Plan Project

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Current View Looking Northwest from Honey Run Road

Anticipated View Looking Northwest from Honey Run Road (Immature Trees)

Anticipated View Looking Northwest from Honey Run Road (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-12

View Looking Northwest from Honey Run Road

Valley's Edge Specific Plan Project

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Current View Looking Northeast from Honey Run Road

Anticipated View Looking Northeast from Honey Run Road (Immature Trees)

Anticipated View Looking Northeast from Honey Run Road (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-13

View Looking Northeast from Honey Run Road

Valley's Edge Specific Plan Project

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Current View Looking Northeast from Skyway Road

Anticipated View Looking Northeast from Skyway Road (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-14

View Looking Northeast from Skyway Road

Valley's Edge Specific Plan Project

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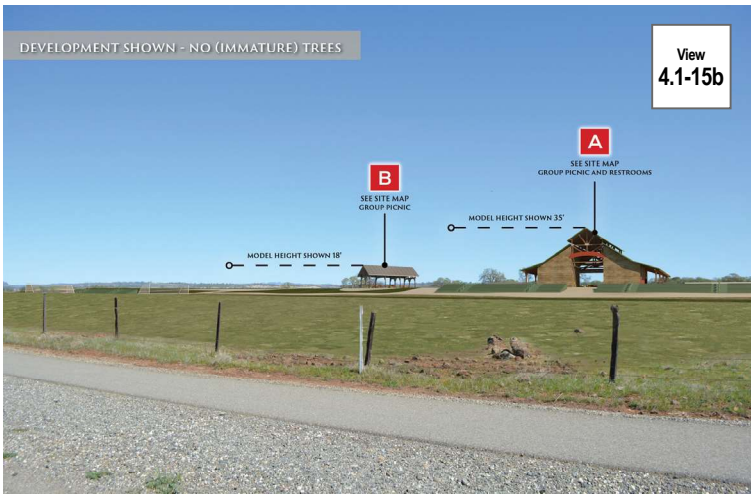
Current View Looking Northeast from Steve Harrison Memorial Bike Path



Anticipated View Looking Northeast from Steve Harrison Memorial Bike Path (Immature Trees)

Anticipated View Looking Northeast from Steve Harrison Memorial Bike Path (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-15

View Looking Northeast from Steve Harrison Memorial Bike Path

Valley's Edge Specific Plan Project

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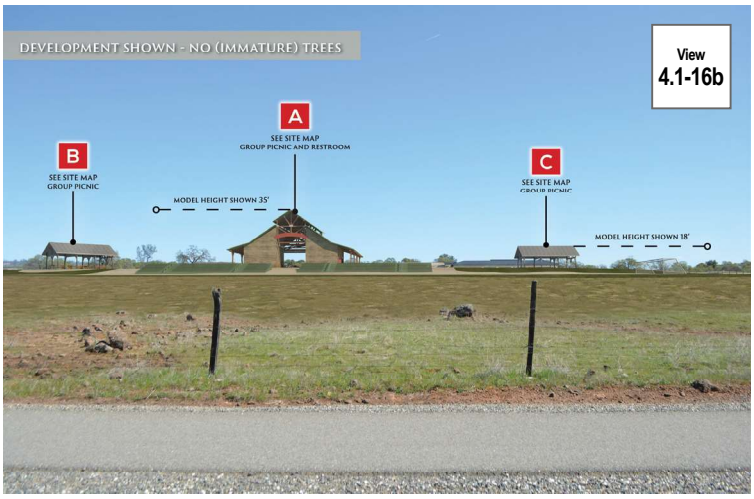
Current View Looking East from Steve Harrison Memorial Bike Path



Anticipated View Looking East from Steve Harrison Memorial Bike Path (Immature Trees)

Anticipated View Looking East from Steve Harrison Memorial Bike Path (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-16

View Looking East from Steve Harrison Memorial Bike Path

Valley's Edge Specific Plan Project

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Current View Looking Southeast from Steve Harrison Memorial Bike Path

Anticipated View Looking Southeast from Steve Harrison Memorial Bike Path (Immature Trees)

Anticipated View Looking Southeast from Steve Harrison Memorial Bike Path (Mature Trees)

SOURCE: rga 2020

FIGURE 4.1-17

View Looking Southeast from Steve Harrison Memorial Bike Path

Valley's Edge Specific Plan Project

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Future development would be required to comply with the City's policies, as well as the VESP Design Guidelines and development standards and subsequent design review through the VESP DRC, ensuring that project components are designed and constructed to be compatible with surrounding neighborhoods. In addition, using natural colors would allow the buildings to appear to blend into the existing landscape, and new landscaping would screen views of the development. For example, the VESP Design Guidelines promote incorporation of natural and native landscape elements into residential landscaping (A.6.7 and A.6.8, Single-family and multi-family landscape design guidelines). VESP Action LU-4.5 requires building massing, building materials, color schemes and placement to reduce visual impacts within the Foothill Development Overlay area; and VESP Action LU-3.3 which promotes development of common landscape architecture themes that unify the streetscape and the project. The VESP development standards also limit building heights to 35-feet for single-family residential and 45-feet for multi-family residential (not including vents, solar panels, chimneys) and in areas of high public visibility building heights may be lower including areas adjacent to Stilson Canyon. The existing on-site oak trees have been identified as key landmarks and are described in the VESP as critical to maintaining the foothill character. In addition, the City's General Plan includes policies to ensure new development promotes architectural design that is timeless and uses high quality materials (Policy CD-3.1) and Chapter 19.52.100 of the City's Municipal Code provides specific development standards within foothill areas that the VESP incorporates in the Design Guidelines and development standards.

In summary, the proposed project would alter the existing undisturbed and undeveloped visual character and public views of the project site. The magnitude of this change would be partially ameliorated through the design measures described above, and screening provided by landscaping. Nonetheless, the changes to the project site would be permanent, and views of the project site would no longer be of undeveloped open land. This change would constitute a substantial degradation to the current visual character and quality of the site. Therefore, this is considered a significant impact.

Mitigation Measures

Implementation of Mitigation Measure AES-1 would help minimize impacts to visual character and public views of the project site. However, because the project would result in permanent changes due to converting undeveloped open land to a developed area with residential and commercial uses, the impact would remain significant. There are no additional, feasible mitigation measures to reduce the impact to less than significant beyond adherence to the policies and actions contained in the City's General Plan, Chapter 19.52.100 of the City's Municipal Code, and the VESP. Therefore, the impact would be significant and unavoidable.

AES-1: Future residential and commercial development would be reviewed pursuant to Chapter 19.18 of the Chico Municipal Code. Review and approval of any site plans and architectural designs would be required prior to the issuance of a building permit by the project's Design Review Committee, City planning staff, and the City's Architectural Review and Historic Preservation Board (if required), unless the proposed development is exempt from design review under Title 19.

4.1-3 The proposed project could create light or glare which could adversely affect day or nighttime views in the area.

The project site is undeveloped so there is no existing source of light or glare. Daytime sources of light and glare adjacent to the site are sparse and concentrated at the northern, southern, and western borders, consisting of limited reflections from building windows or surfaces of cars traveling along Skyway, Honey Run

Road, and E. 20th Street; bikes traveling along Bike Path; and windows on surrounding residences and commercial uses. Nighttime light sources in the vicinity of the site include street lights along E. 20th Street and Skyway, and exterior building lights associated with the residential and commercial uses along the northeast and southeast borders of the site.

The proposed project would introduce new sources of light and glare to the site, including interior and exterior building lights, vehicle headlights, and reflective surfaces such as windows or metal surfaces. Views into the project site at night would be altered by these sources of artificial light. During project construction there may also be overhead lights provided for security that could alter current views of the site. Exterior lighting associated with single-family residences is typically low-level or recessed, of low intensity, and must also comply with the City's Municipal Code. Security lighting would be placed along pathways and other pedestrian use areas near the Village Core, as well as in building and site design to enhance public safety and deter criminal activity. The California Green Building Code establishes limits for the quantities of lighting that can be emitted based upon building components. Additionally, the City requires full cut off lighting fixtures (Municipal Code Section 19.60.050). Project development would comply with all applicable City requirements and the California Green Building Code. All exterior lighting associated with development would be reviewed for compliance with the Chico Municipal Code by the City planning staff and the VESP DRC and the City's ARHPB consistent with Mitigation Measure AES-1.

The project would comply with General Plan Action LU-6.2.4 which states that planning of the project shall incorporate special lighting standards to reduce impacts on the nighttime sky. As described in the VESP Design Guidelines (p. A-8), all exterior lighting would be low intensity, fully shielded, and directed downward to prevent excessive brightness or light trespass onto adjacent properties. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb, rather than reflect, light. Pedestrian lights would be appropriately spaced and located at key locations, with taller 30-foot-tall street lights to illuminate a larger area of the streetscape. In accordance with VESP Action LU-4.4, the project would minimize light pollution by eliminating streetlights where not necessary for public and personal safety. In accordance with the California Building Code, energy conservation and efficiency would be a primary consideration. Automatic control systems would be used to eliminate excessive light during non-active hours of building operation. All exterior lighting would be designed to shield the light bulb, so as to not be seen from adjacent development or from public viewpoints.

The increase in new light and glare sources added to the project site as a result of the proposed project would be minimized with adherence to the VESP lighting standards, policies and actions including Design Guidelines, and the California Building Code as well as through new trees and other landscaping features that would help block or diffuse sources of nighttime light. The project would be subject to existing city development and design standards set forth in the City's Municipal Code and would also be reviewed by the City's ARHPB, as stated in Mitigation Measure AES-1. For instance, Section 19.60.050 of the Municipal Code requires that exterior lighting be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections are confined, to the maximum extent feasible, within the boundaries of the site. Exterior lighting is to be directed downward and away from adjacent properties and public rights-of-way. Shielded means that the light rays are directed onto the site and the light source, whether bulb or tube, is not visible from an adjacent property. Permanently installed lighting cannot blink, flash, or be of unusually high intensity or brightness. All lighting fixtures must be appropriate in scale, intensity, and height to the use they are serving. Design review in compliance with Mitigation Measure AES-1 would ensure that all lighting fixtures would be appropriate in scale, intensity, and height. Thus, while addition of new light and glare

sources may be noticeable to some viewers in the surrounding area or motorists traveling on adjacent roadways; it is anticipated this change would not be substantial enough to significantly impact day or nighttime views in the area or from the adjacent properties, including the nearby commercial and office properties. Therefore, light and glare impacts would be considered **less-than-significant.**

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for the evaluation of potential cumulative impacts on aesthetic resources is future development within the City of Chico associated with buildout of the 2030 General Plan. The scope of the cumulative impact analysis for aesthetics includes the area that comprises the viewshed in which the project site is visible, and the views of the project site (which includes development in the immediately surrounding areas) for the duration of the project's operation. This is considered the area within view of the project site, and therefore, the area most likely to experience changes in visual character or experience light and glare impacts from the project. The area surrounding the project site is characterized by urban development to the northeast and southeast, including single and multi-family residences, and commercial uses to the southeast. Additionally, the recently approved Stonegate residential subdivision project, which includes a combination of open space, park, single-family and multi-family residential, and commercial uses is located to the west across the other side of the Bike Path. No development is proposed east of the project site, as the easterly edge of the site is also the City's Sphere of Influence boundary.

The cumulative context for light would be other development in the surrounding area that could affect the same area as that affected by project-generated light at the same time the proposed project is in operation.

4.1-4 The proposed project could result in a significant cumulative impact related to scenic vistas and quality of public views or visual character.

As stated above, the cumulative context for aesthetics includes the area that comprises the viewshed in which the project site is visible, and the views of the project site for the duration of the project's operation. As described in the City's 2030 General Plan Update EIR, the City is anticipated to experience growth in association with new and infill development, which would result in cumulatively considerable changes in the visual character and scenic views of the region resulting in a significant cumulative impact related to scenic vistas, scenic resources, existing visual character (City of Chico 2010, p. 14.13-18). As undeveloped areas transition from a rural to an urban character, existing viewsheds within City would be affected, existing views of rural uses and open spaces would be changed to urban uses, and views of the foothills may be altered or obstructed. Important visual resources such as mature trees, rock outcroppings, and rural structures would be lost to new development. The proposed project is one of the few SPAs that is proposed under the 2030 General Plan. Generally, the other SPAs include land that is characterized by rural residential and agricultural operations and undeveloped open space lands. Thus, even without the proposed project, there would be an existing cumulative impact related to the transition from rural to urban characters, adversely affecting scenic vistas, scenic resources, and existing visual character.

The City's existing policy and regulatory framework provides a comprehensive approach to reducing the visual prominence of new development and adverse impacts to existing scenic vistas. However, the City's General Plan EIR still concluded that impacts related to scenic vistas and change in visual character/quality of public views would be significant and unavoidable. This analysis included all projects within the City's Sphere of Influence (SOI), including the project site (Doe Mill/Honey Run SPA). New development as part of the proposed project would alter the visual character of the area by building on approximately 60% of the site's 1,400-acres of undeveloped land. This would constitute a substantial degradation to the existing visual character of the site as views of this undeveloped landscape would no longer be available. Additionally, the General Plan describes the foothill transition east of the current City boundaries as a scenic vista. Development of this area would permanently change the character of this scenic vista. Overall, the proposed project would contribute to the permanent cumulative loss of scenic vistas and views of bucolic, undeveloped landscapes. Consistent with Mitigation Measure AES-1, the proposed project would be subject to design review by the City's ARHPB which would help minimize impacts to scenic vistas and quality of public views or visual character. However, this would still be a significant impact due to the project footprint and the permanent change from undeveloped land to a planned developed environment, and here is no additional, feasible mitigation to reduce the project's contribution to less than considerable. Thus, the project's contribution to impacts associated with scenic vistas and visual character/quality of public views, would be cumulatively considerable. With consideration of the above, the proposed project's contribution is cumulatively considerable and would result in a **significant cumulative impact** associated with scenic vistas, visual quality and visual resources.

Mitigation Measures

See Mitigation Measure AES-1. Implementation of AES-1 would help minimize the project's cumulative impact to scenic vistas, visual character, and public views of the project site. However, due to the permanent changes to the project site from the conversion of undeveloped open land to a developed area with residential and commercial uses, the impact would remain significant. There are no feasible mitigation measures to reduce the impact to less than significant even with adherence to policies and actions contained in the City's General Plan and the VESP. Therefore, the project's cumulative contribution would result in a **significant and unavoidable cumulative impact.**

4.1-5 The proposed project could result in a significant cumulative impact related to light and glare.

The cumulative context for light and glare would be other development in the surrounding area that could contribute to an increase in light and glare. The City's 2030 General Plan Update EIR concluded that there would be a cumulatively considerable impact related to light and glare resulting from new development within the City's SOI. As undeveloped areas transition from rural to urban character, the amount of light and glare would increase due to new buildings, structures, street lights, and vehicle lights. This is especially noticeable in infill development projects in which new lighting would be close to other lighting sources and would illuminate shared areas, contributing to a significant cumulative impact.

As the project site is currently undeveloped, there are no existing light and glare impacts within the area. While the project would add new light and glare sources, such as exterior building lights and windows, all exterior lighting associated with development would be reviewed for compliance with the VESP lighting guidelines and the City's Municipal Code section 19.60.050. The level of on-site lighting and type and design of lighting fixtures would be "Dark-Sky" compliant and would comply with all applicable City requirements and the California Green Building Code. As described in the VESP Design Guidelines (p. A-8), all exterior lighting would

be low intensity, fully shielded, and directed downward to prevent excessive brightness or light trespass onto adjacent properties. With these measures in place, project lighting would not trespass into other areas. New lighting would be confined to the project site and would be fully shielded and directed downward so as to not contribute to cumulative light pollution impacts. Additionally, design review by the ARHPB as described in Mitigation Measure AES-1 requires compliance with City requirements. When considered in combination with the impacts of other projects in the cumulative scenario, the project's incremental contribution to light and glare would not be cumulatively considerable because the project would not include lighting that would affect other areas also affected by lighting from other cumulative projects. Thus, cumulative light and glare impacts would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.1.4 References

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4.2 Air Quality

4.2.0 Introduction

This section describes the existing air quality conditions of the proposed Valley's Edge Specific Plan area (proposed project or VESP) and the vicinity, identifies associated regulatory requirements, and evaluates potential impacts of the project with respect to consistency with air quality plans, emission of criteria air pollutants, and exposure to pollutant concentrations.

Comments received in response to the Notice of Preparation (NOP) from the public and the Butte County Air Quality Management District (BCAQMD) include a recommendation that the proposed project's construction and operational criteria air pollutant and greenhouse gas (GHG) emissions are estimated, and potential health impacts are addressed. In addition, it was requested that the latest version of California Emissions Estimator Model (CalEEMod) be used since the proposed project exceeds the screening size provided within the *2014 CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review*. The most current version of CalEEMod (2020.4.0) was used to model air emissions associated with both project construction and operation. This section addresses all of the concerns raised in the comment letters. The NOP and comments received are included in Appendix A.

The primary sources reviewed to prepare this section include the 2017 update to the City of Chico 2030 General Plan, the BCAQMD *2014 CEQA Air Quality Handbook*, and information from the City of Chico.

4.2.1 Environmental Setting

Ambient air quality is generally affected by climatological conditions, the topography of the air basin, the type and amounts of pollutants emitted, and, for some pollutants, sunlight. The project site is located within the Sacramento Valley Air Basin (SVAB). Topographical and climatic factors in the SVAB create the potential for high concentrations of regional and local air pollutants. This section describes relevant characteristics of the air basin, types of air pollutants, health effects, and existing air quality levels.

The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and portions of Solano and Placer counties. The SVAB extends from south of Sacramento to north of Redding and is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and the Sierra Nevada. The San Joaquin Valley Air Basin is located to the south.

Climate and Topography

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the valley. Temperatures may range from a low 20°F to a high of 115°F, with summer highs usually in the 90s and winter lows occasionally below freezing. The high average summer temperatures, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. Average annual rainfall is approximately 20 inches, with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist, clean breezes from the south to dry land flows from the north (SMAQMD 2019).

Weather patterns throughout the SVAB are affected by geography. Mountain ranges tend to buffer the basin from the marine weather systems that originate over the Pacific Ocean. However, the Carquinez Strait creates a breach in the Coast Range on the west of this basin, which exposes the midsection of the SVAB to marine weather. This marine influence moderates climatic extremes, such as the cooling that sea breezes provide in summer evenings. These breezes also help to move pollutants out of the valley. The prevailing winds come from the south and southwest. During approximately half of the days from July through September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south (SMAQMD 2019). Essentially, this phenomenon causes the air pollutants to concentrate within the lower portions of the Sacramento Valley. This effect exacerbates the pollution levels in the area and increases the likelihood of violating federal and state standards. The effect normally dissipates around noon when the delta sea breeze arrives.

The mountains surrounding the valley can also contribute to elevated pollutant concentrations during periods of elevated surface inversions. These inversions are most common in late summer and in the fall. Surface inversions are formed when the air close to the surface cools more rapidly than the warm layer of air above it. Elevated inversions occur when a layer of cool air is suspended between warm air layers above and below it. Both situations result in air stagnation. Air pollutants accumulate under and within inversions, subjecting people to elevated pollution levels and associated health concerns. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground (SMAQMD 2019).

Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The national and California standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[1]

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly oxides of nitrogen (NO_x) and reactive organic gases (ROGs, also termed volatile organic compounds or VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level

[1] The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's (EPA's) Criteria Air Pollutants (EPA 2018) and the California Air Resources Board's (CARB's) Glossary of Air Pollutant Terms (CARB 2019a).

O_3)[2]. The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in and cause shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies of O_3's effects on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3 and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

Nitrogen Dioxide and Oxides of Nitrogen NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x, which includes NO_2 and nitric oxide, plays a major role, together with ROG, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources of NO_x are transportation and stationary fuel combustion sources (such as electric utility and industrial boilers).

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards (AAQS) for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration.

[2] The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher levels of exposure compared to children with lower exposure levels. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in airflow resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides, NO_x, and ROG.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is small enough to penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24-hour duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all of the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and worldwide based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB 2017).

Long-term exposure (months to years) to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and, in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood, because children are highly susceptible to the effects of lead. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere and can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles. Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Reactive Organic Gases. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as ROGs (also referred to as VOCs). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of ROGs result from the formation of O_3 and its related health effects. High levels of ROGs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for ROGs as a group.

Non-Criteria Air Pollutants

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic non-cancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting

toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples of TACs include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2019f). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including over 40 known carcinogenic organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2019f). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) (Cal. Code Regs., tit.17, § 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars; and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2019f). Those most vulnerable to non-cancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

Odorous Compounds. Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Sensitive Receptors. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. The term sensitive receptors is used to refer to facilities and structures where people who are sensitive to air pollution live or spend considerable amounts of time. Land uses where air pollution-

sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005).

The closest off-site sensitive receptors include residential uses adjacent to the project site's boundary to the north and south. In addition, components of the proposed project include residential land uses and age-restricted housing which would be developed as the proposed project is build out.

Air Quality Conditions

Butte County Attainment Designations

Pursuant to the 1990 federal Clean Air Act amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the National Ambient Air Quality Standards (NAAQS) have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as attainment for that pollutant. If an area exceeds the standard, the area is classified as nonattainment for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on California Ambient Air Quality Standards (CAAQS) rather than the NAAQS. Table 4.2-1 identifies the current attainment status of the project site with respect to the NAAQS and CAAQS, and the attainment classifications for the criteria pollutants.

Table 4.2-1. Butte County Attainment Classification

Pollutant	Averaging Time	Designation/Classification
National Standards		
O_3	8 hours	**Marginal Nonattainment**
NO_2	1 hour, annual arithmetic mean	Unclassifiable/Attainment
CO	1 hour; 8 hours	Unclassifiable/Attainment
SO_2	24 hours; annual arithmetic mean	Unclassifiable/Attainment
PM_{10}	24 hours	Unclassifiable/Attainment
$PM_{2.5}$	24 hours; annual arithmetic mean	**Moderate Nonattainment**
Lead	Quarter; 3-month average	Unclassifiable/Attainment
California Standards		
O_3	1 hour; 8 hours	**Nonattainment**
NO_2	1 hour; annual arithmetic mean	Attainment
CO	1 hour; 8 hours	Attainment
SO_2	1 hour; 24 hours	Attainment
PM_{10}	24 hours; annual arithmetic mean	**Nonattainment**
$PM_{2.5}$	Annual arithmetic mean	**Nonattainment**
Lead	30-day average	Attainment
SO_4	24 hours	Attainment

Table 4.2-1. Butte County Attainment Classification

Pollutant	Averaging Time	Designation/Classification
H_2S	1 hour	Unclassified
Vinyl chloride	24 hours	No designation
Visibility-reducing particles	8 hours (10:00 a.m.–6:00 p.m.)	Unclassified

Sources: EPA 2020 (national); CARB 2018 (California).
Notes: O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SO_4 = sulfates; H_2S = hydrogen sulfide.

In summary, Butte County is designated as a nonattainment area for the national O_3 and $PM_{2.5}$ standards and is nonattainment for the state O_3, PM_{10} and $PM_{2.5}$ standards. Butte County is designated as unclassified or attainment for all other state and federal standards (EPA 2020; CARB 2018).

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Table 4.2-2 presents the most recent background ambient air quality data from 2016 to 2018 from the closest monitoring stations. The East Avenue monitoring station, located at 984 East Ave, Chico, California, is the nearest air quality monitoring station to the project site, located approximately 1.8 miles north of the project site. This station monitors O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$. However, no monitoring data was available for SO_2 within Butte County. The data collected at this station is considered representative of the air quality experienced in the project vicinity and is provided in Table 4.2-2. The number of days exceeding the ambient air quality standards are also shown in Table 4.2-2.

Table 4.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*[a]	*2016*	*2017*	*2018*[a]
Ozone (O_3)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	0.09	0.080	0.076	0.076	0	0	0
	ppm	Maximum 8-hour concentration	California	0.070	0.074	0.070	0.070	*1*	*0*	*0*
			National	0.070	0.073	0.069	0.069	*1*	*0*	*0*
Nitrogen Dioxide (NO_2)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	0.18	0.032	0.037	0.051	0	0	0
			National	0.100	0.032	0.038	0.052	0	0	0
	ppm	Annual concentration	California	0.030	0.006	0.006	0.006	0	0	0
			National	0.053	—	—	—	—	—	—
Carbon Monoxide (CO)										
East Avenue Monitoring Station	ppm	Maximum 1-hour concentration	California	20	—	—	—	—	—	—
			National	35	1.7	1.9	20.7	0	0	0
	ppm	Maximum 8-hour concentration	California	9.0	—	—	—	—	—	—
			National	9	1.4	1.4	12.8	0	0	8
Coarse Particulate Matter (PM_{10})[b]										
East Avenue Monitoring Station	g/m^3	Maximum 24-hour concentration	California	50	58.1	101.3	454.0	8 (8.1)	14 (ND)	40 (41.5)
			National	150	57.0	101.4	478.7	ND (14)	0.0 (0)	3.0 (9)
	g/m^3	Annual concentration	California	20	20.6	ND	32.3	—	—	—

Table 4.2-2. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	*2018*[a]	*2016*	*2017*	*2018*[a]
Fine Particulate Matter ($PM_{2.5}$)[b]										
East Avenue Monitoring Station	g/m^3	Maximum 24-hour concentration	National	35	37.2	45.2	411.7	1.2 (1)	2.3 (2)	18.8 (18)
	g/m^3	Annual concentration	California	12	45.9	47.0	417.0	—	—	—
			National	12.0	7.6	9.0	13.7	—	—	—

Sources: CARB 2019g; EPA 201

Notes: ppm = parts per million by volume; ND = insufficient data available to determine the value; — = not available; $\mu g/m^3$ = micrograms per cubic meter.

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year. Exceedances of national and California standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed national or California standards during the years shown. There is no national standard for 1-hour ozone, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.

East Avenue Monitoring Station is located at 984 East Avenue, Chico, California 95926.

[a] Air monitoring data from 2018 is substantially higher compared with previous years concentrations due to the Camp Fire event experienced in November 2018.

[b] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard.

4.2.2 Regulatory Setting

Federal Regulations

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting NAAQS for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State Regulations

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. For each pollutant, concentrations must be below the relevant CAAQS before an air basin can attain the corresponding CAAQS. Air quality is considered in attainment if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

California air districts have based their thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health. Table 4.2-3 presents the NAAQS and CAAQS.

Table 4.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Lead[j,k]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24 hours	25 µg/m³	—	—

Table 4.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: ppm = parts per million by volume; μg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (μg/m³) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° Celsius (°C) and a reference pressure of 760 torr (1 atmosphere). Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the primary and secondary NAAQS for O_3 were lowered from 0.075 ppm to 0.070 ppm

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m³ to 12.0 μg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m³, as was the annual secondary standard of 15 μg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The State Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the Legislature enacted the Air Toxics "Hot

Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several airborne toxic control measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 Cal. Code Regs. §§ 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 Cal. Code Regs. § 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local Regulations

Butte County Air Quality Management District

The BCAQMD is the primary agency responsible for planning to meet federal and state ambient air quality standards in Butte County. The BCAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. As a part of the BCAQMD CEQA Air Quality Handbook, in 2014, the BCAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BCAQMD believes air pollution emissions would cause significant environmental impacts under CEQA. The significance thresholds identified by BCAQMD and used in this analysis are summarized in Table 4.2-7.

The BCAQMD's air quality management plans include control measures and strategies to be implemented to attain state and federal ambient air quality standards in Butte County. The BCAQMD implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment. Applicable BCAQMD attainment plans include the following:

- ***Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan:*** This plan is intended to comply with the requirements of the California Clean Air Act related to bringing the region into compliance with the CAAQS for O_3. BCAQMD has prepared several triennial progress reports that

build on the 1991 Air Quality Attainment Plan. The 2018 Triennial Air Quality Attainment Plan (BCAQMD 2018) is the most recent report. The triennial progress report describes historical trends in air quality, includes updated emissions inventories, and identifies feasible control measures that the BCAQMD will study or adopt over the triennial period.

- ***Chico, CA/Butte County $PM_{2.5}$ Nonattainment Area Redesignation Request and Maintenance Plan:*** On November 16, 2017, CARB approved and submitted a request that EPA find the Chico/Butte County region in attainment for the 2006 24-hour $PM_{2.5}$ NAAQS (BCAQMD 2017). On July 11, 2018, the EPA officially determined that the Chico/Butte County region Federal Nonattainment Area had attained the 24-hour $PM_{2.5}$ NAAQS by the attainment deadline. In August 2018, the BCAQMD approved the $PM_{2.5}$ maintenance plan and request for re-designation for the 2006 $PM_{2.5}$ NAAQS to meet the EPA re-designation requirements.

Rules and Regulations. The BCAQMD establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to TACs. Rules and regulations that may apply to the proposed project during construction and/or operations include the following:

- **Rule 200 – Nuisance**: To protect the public health, Rule 200 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.
- **Rule 201 – Visible Emissions**: Prohibits individuals from discharging into the atmosphere from any single source of emissions whatsoever any air contaminant whose opacity exceeds certain specified limits.
- **Rule 202 – Particulate Matter Concentration**: Requires a person to take every reasonable precaution not to cause or allow the discharge of particulate matter from being airborne in excess of 0.3 grains per cubic foot of gas.
- **Rule 205 – Fugitive Dust**: Requires a person to take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates; from construction, handling, or storage activity; or any wrecking, excavation, grading, clearing of land, or solid waste disposal operation.
- **Rule 270 – Wood Burning Devices:** This rule prohibits the sale, supply, or installation, of a used wood burning device in any new or existing interior space unless it is a BCAQMD approved device.
- **Rule 230 – Architectural Coatings**: Sets volatile organic compound limits for coatings that are applied to stationary structures or their appurtenances. The rule also specifies storage and cleanup requirements for these coatings.
- **Rule 231 – Cutback and Emulsified Asphalt:** Asphalt paving operations that may be associated with implementation of the project would be subject to Rule 231. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operations.
- **Rule 500 – Stationary Source Permit Fees:** The BCAQMD regulates criteria air pollutant emissions from new and modified stationary sources through this rule.

Butte County Association of Governments

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency for Butte County. BCAG is responsible for the development of federal and state transportation plans and programs that secure funding for transportation improvements in the County. BCAG adopted the 2016 Regional Transportation

Plan/Sustainable Communities Strategy (RTP/SCS) on December 8, 2016. For Butte County, the 2016 RTP/SCS sets a regional target of a 6% reduction in per capita greenhouse gas (GHG) emissions for the planning year 2020 and a 7% reduction in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. The 2016 MTP/SCS outlines the region's proposed transportation network, emphasizing multimodal system enhancements, system preservation, and improved access to high quality transit, as well as land use development that complements this transportation network (BCAG 2016). In December 2016, CARB accepted BCAG's determination that the 2016 RTP/SCS would meet the region's GHG reduction targets. BCAG is initiating an update of the 2016 RTP/SCS with the 2020 RTP/SCS, which is slated to be released Fall 2020.

City of Chico 2030 General Plan

The City of Chico 2030 General Plan (City of Chico 2017) includes various goals, policies, and actions related to improving air quality (both directly and indirectly). Applicable goals, policies, and actions include the following:

Circulation Element

Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.

Policy CIRC-1.2 (Project-level Circulation Improvements) – Require new development to finance and construct internal and adjacent roadway circulation improvements as necessary to mitigate project impacts, including roadway, transit, pedestrian, and bicycle facilities.

Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.

Policy CIRC-2.1 (Complete Streets Standards) – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and GHG emissions; and reinforces the role of the street as a public space that unites the City.

Action CIRC-2.1.1 (Complete Streets Standards) – With consideration of street classification and function, design new streets to accommodate all modes of travel, including transit, bicycles, pedestrians, vehicles and parking.

Action CIRC-2.1.3 (Multimodal Connections) – Provide connections between and within existing and new neighborhoods for bicycles, pedestrians, and automobiles.

Policy CIRC-2.2 (Circulation Connectivity and Efficiency) – Provide greater street connectivity and efficiency for all transportation modes.

Action CIRC-2.2.1 (Connectivity in Project Review) – New development shall include the following internal circulation features:

- A grid or modified grid-based primary street system. Cul-de-sacs are discouraged, but may be approved in situations where difficult site planning issues, such as odd lot size, topography, or physical constraints exist or where their use results in a more efficient use of land, however in all cases the overall grid pattern of streets should be maintained;
- Traffic-calming measures, where appropriate;

- Roundabouts as alternative intersection controls, where appropriate;
- Bicycle and pedestrian connections to adjacent streets, trails, public-spaces, and bicycle paths; and
- Short block lengths consistent with City design standards.

Action CIRC-2.2.2 (Traffic Management) – Perform routine, ongoing evaluation of the street traffic control system, with emphasis on traffic management, such as signal timing and coordination or the use of roundabouts, to optimize traffic flow along arterial corridors and reduce vehicle emissions.

Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.

Policy CIRC-3.3 (New Development and Bikeway Connections) – Ensure that new residential and non-residential development projects provide connections to the nearest bikeways.

Action CIRC-3.3.1 (Bikeway Requirements) – Require pedestrian and bicycle connections to the Citywide bikeway system every 500 feet, where feasible, as part of project approval and as identified in the Bicycle Master Plan.

Policy CIRC-3.6 (Bicycle Parking) – Provide safe and secure bicycle parking and support facilities.

Action CIRC-3.6.1 (Bicycle Parking and Facilities) – Maintain standards in the Municipal Code for bicycle parking and bicycle-support facilities.

Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.

Policy CIRC-4.1 (Pedestrian Master Planning) – Continue to integrate and highlight pedestrian access and dual use bicycle and pedestrian pathways in the Bicycle Master Plan.

Policy CIRC-4.2 (Continuous Network) – Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.

Policy CIRC-4.3 (Pedestrian-Friendly Streets) – Ensure that streets in areas with high levels of pedestrian activity, such as near schools, employment centers, residential areas, and mixed-use areas, support safe pedestrian travel by providing elements such as detached sidewalks, bulb-outs, on-street parking, enhanced pedestrian crossings, and medians.

Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.

Policy CIRC-5.3 (Transit Connectivity in Projects) – Ensure that new development supports public transit.

Action CIRC-5.3.1 (Roadway Transit Facilities) – When planning or retrofitting roadways, consult with BCAG regarding the inclusion of transit stops, shelters, bus turnouts, and other transit improvements.

Action CIRC-5.3.2 (Roadway Improvements for New Development) – During project review, consult with BCAG to determine appropriate requirements for the installation of stops and streetscape improvements, if needed to accommodate transit.

Goal CIRC-9: Reduce the use of single-occupant motor vehicles.

Policy CIRC-9.1 (Reduce Peak-Hour Trips) – Strive to reduce single occupant vehicle trips through the use of travel demand management strategies.

Action CIRC-9.1.2 (Existing Employer Trip Reduction Programs) – Encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, and preferential parking for carpools/vanpools.

Action CIRC-9.1.3 (New Employer Trip Reduction Programs) – As a condition of project approval, require new non-residential projects that will employ more than 100 people to submit a Travel Demand Management Plan that identifies strategies, such as those listed in Action CIRC-9.1.2, to reduce single occupancy vehicle trips.

Policy CIRC-9.2 (Off-Peak Deliveries) – Encourage business owners to schedule deliveries during off-peak traffic periods.

Policy CIRC-9.3 (Emphasize Trip Reduction) – Emphasize automotive trip reduction in the design, review, and approval of public and private development.

Community Design Element

Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.

Policy CD-2.1 (Walkable Grid and Creek Access) – Reinforce a walkable grid street layout and provide linkages to creeks and other open spaces.

Action CD-2.1.1 (Circulation and Access) – As part of project review, integrate a predominately grid-based street pattern into new development to enhance walkability and public health.

Action CD-2.1.2 (Bike Trails, Paths and Medians) – Establish linkages and an improved sense of place through enhanced bike trails, pedestrian paths, landscaped medians and parkways.

Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.

Policy CD-3.2 (Bicycle and Pedestrians) – Maintain and enhance the pedestrian- and bicycle-friendly environment of Chico.

Action CD-3.2.1 (Pedestrian-Scale Site Planning) – Utilize design techniques provided in the City's Design Guidelines Manual that support pedestrian- and bicycle-friendly site planning.

Policy CD-3.3 (Pedestrian Environment and Amenities) – Locate parking areas and design public spaces within commercial and mixed-use projects in a manner that promotes pedestrian activity.

Goal OS-4: Improve air quality for a healthy City and region.

Policy OS-4.1 (Air Quality Standards) – Work to comply with state and federal ambient air quality standards and to meet mandated annual air quality reduction targets.

Action OS-4.1.1 (Air Quality Impact Mitigation) – During project and environmental review, evaluate air quality impacts and incorporate applicable mitigations, including payment of air quality impact fees, to reduce impacts consistent with the BCAQMD's CEQA Air Quality Handbook.

Action OS-4.1.2 (Wood Burning) – Implement measures to reduce air pollution from wood burning.

Action OS-4.1.5 (Reduce Traffic Pollution) – Reduce pollution from traffic by providing a well-connected circulation system with complete streets, enhancing bicycle facilities, supporting transit, and implementing traffic calming techniques such as roundabouts, narrowed streets, and chicanes.

Valley's Edge Specific Plan

The VESP includes the following goals, policies, or actions related to improving air quality. These policies and actions would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Principles, Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-3: Promote Outdoor Recreation & Complement Bidwell Park. Promote outdoor recreation by creating space and facilities which foster, play, exercise, adventure, and social interaction. Strive to complement Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

Action PROS-3.1 – Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.

Action PROS-3.5 – Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan area are within 350 yards of a park, trail, or open space element.

Action PROS-3.8 – Create and maintain no less than 20 miles of open space biking, hiking, and multi-use trails for recreation, play, exercise and non-motorized transit.

Section 2.3.2 Chapter 4: Land Use

Goal LU-2: Balance Growth and Conservation. Balance growth and conservation by reinforcing the City's compact urban form, by establishing urban grow limits, by managing where and how growth and conservation will occur, in addition to responding to Chico's housing demand, rental units, and commercial space in a responsible and comprehensively planned manner.

Action LU-2.2 - Ensure development is consistent with the City of Chico Climate Action Plan.

Action LU-2.8 – Promote walkability by locating multi-family areas next to Village Core, community clubhouse, community park, and elementary school, all served by a Class I trail network.

Section 2.3.3 Chapter 5: Circulation and Trails

Goal C-1: Multi-modal Circulation and Minimize Greenhouse Gas (GHG) Impacts. Minimize GHG impacts by providing a variety of transportation choices and incorporating features that result in vehicular trip reduction.

Action C-1.1 – Create a network of bike and pedestrian trails that connects the community, enables safe and convenient access between land uses and places of interest, fosters healthy outdoor experiences, and reduces automobile reliance.

Action C-1.2 – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street a public space that unites the community.

Action C-1.3 – Promote non-vehicular travel by creating a network of Class I trails and improved surface trails that caters to residents' and children daily travel trips, safe and efficient routes of travel between residential areas and school, parks, shopping areas, services and employment areas.

Action C-1.5 – Promote and encourage neighborhood electric vehicles (NEV's) by designing all roadways to accommodate their use.

Action C-1.4 – Promote increased trail usage by ensuring that 100% of the homes are within 350 yards of a connection to the overall trail network.

Action C-1.5 – Promote and encourage neighborhood electric vehicles (NEV's) by designing all roadways to accommodate their use.

Action C-1.6 – Minimize travel distance and transit efficiency by locating land uses servicing the broader Chico community at the westerly edge of the plan area, directly accessible from the main collector roadway and the Class I trail system facilitating on and off-site connectivity.

Action C-1.7: Promote electric vehicle usage by providing EV charging stations in public parking lots and in all multi-family projects, by providing 240V outlet in no less than 50% of all garaged residential units, and by supporting electric bike and scooter rental services (e.g., Lime, Bird).

Action C-1.8 – Promote the use of bicycles as modal transportation by designing streetscapes and rest areas to provide shade, and by designing bike lanes, intersections, and roundabouts to enable safe passage.

Action C-1.9 – Create an intermodal park and ride lot along the western boundary of the plan area, served by both the major collector roadway and the Class I trail system.

Action C-1.10 – Ensure that sheltered transit stops are located as directed by BCAG and the City of Chico.

Section 2.3.4 Chapter 6: Infrastructure and Public Facilities

Goal INFR-4: Promote On-Site Clean Energy Generation. Reduce GHG emissions through on-site clean energy generation.

Action INFR-4.1 – Require HOA owned and operated facilities to provide infrastructure capable of generating solar photovoltaic power covering no less than 20% of its internal base electrical loads.

Section 2.3.6 Appendix A Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

Action DES-2.1 – Energy and Atmosphere: Build homes that meet or exceed CALGreen energy efficiency standards. Promote Net Zero ready designs and all electric (low carbon fuel source) buildings.

Action DES-2.2 – As applicable, ensure 100% of residential buildings utilize solar photovoltaics per Title 24.

Action DES-2.4 – Materials and Methods: Utilize material efficient construction methods, locally sourced products, durable materials and materials from renewable resources.

Action DES-2.5 – Indoor Environmental Quality: Ensure healthy indoor environments through use of low/zero VOC certified material selection, active fresh air exchange and effective ventilation.

Action DES-2.6 – Construction Waste Reduction: Minimize construction waste and costs through modular off-site sub-assemblies and temporary on-site recycling facility (as economically feasible).

Action DES-2.7 – Site Sensitive Building Design: Promote building designs that reduce viewshed impacts, maintain architectural variety and continuity and respond to local conditions (diurnal breezes, passive solar design elements, etc.).

Action DES-2.10 – Promote use of passive solar design elements and renewable energy technologies through NetZero ready design details and solar within public facilities.

Action DES-2.14 – Ensure building materials including paints, floor finishes and insulation are low/zero VOC certified.

4.2.3 Impacts and Mitigation Measures

Methods of Analysis

The VESP identifies anticipated development by land use type and square footage. Project-generated emissions were estimated based on the level of detail available in the VESP to disclose the magnitude of potential criteria air pollutant emissions generated during construction and operation of the proposed project.

Construction Emissions

Emissions from the construction phase of the proposed project were estimated using CalEEMod Version 2020.4.0. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values where project information was not available.

For purposes of estimating project emissions, it was assumed that construction of the proposed project would commence in April 2022[3] and would last approximately 21 years, ending in July 2043. The proposed project would be built out over six phases of construction which was assumed to reflect phased development over the 22 years. The analysis contained herein is based on the following schedule assumptions (duration of phases is approximate):

- Site Preparation - Phase 1: 2 months
- Trenching - Phase 1: 15 months
- Grading - Phase 1: 6 months
- Building Construction - Phase 1: 33 months
- Paving - Phase 1: 6 months
- Architectural Coatings - Phase 1: 6 months
- Site Preparation - Phase 2: 2 months
- Trenching - Phase 2: 28 months
- Grading - Phase 2: 11 months
- Building Construction - Phase 2: 40 months
- Paving - Phase 2: 11 months
- Architectural Coatings - Phase 2: 6 months
- Site Preparation - Phase 3: 2 months
- Trenching - Phase 3: 19 months
- Grading - Phase 3: 8 months
- Building Construction - Phase 3: 42 months
- Paving - Phase 3: 7 months
- Architectural Coatings - Phase 3: 7 months
- Site Preparation - Phase 4: 10 days
- Trenching - Phase 4: 7 months
- Grading - Phase 4: 3 months
- Building Construction - Phase 4: 15 months
- Paving - Phase 4: 3 months
- Architectural Coatings - Phase 4: 3 months
- Site Preparation - Phase 5: 2 days
- Trenching - Phase 5: 23 days
- Grading - Phase 5: 9 days
- Building Construction - Phase 5: 3 months
- Paving - Phase 5: 9 days
- Architectural Coatings - Phase 5: 9 days
- Site Preparation - Phase 6: 2 days
- Trenching - Phase 6: 10 days
- Grading - Phase 6: 10 days
- Building Construction - Phase 6: 3 months
- Paving - Phase 6: 9 days
- Architectural Coatings - Phase 6: 9 days

Some of the phases listed above would occur concurrently rather than sequentially. The estimated construction duration was provided by the project applicant. Detailed construction equipment modeling assumptions are provided in Appendix B.

Construction-worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. CalEEMod default trip length values were used for the distances for all construction-related trips.

The construction equipment mix and vehicle trips used for estimating the proposed project-generated construction emissions are shown in Appendix B. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days per month) during project construction.

[3] The analysis assumes a construction start date of April 2022, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

Operational Emissions

Emissions from the operational phase of the proposed project were estimated using CalEEMod Version 2020.4.0. The proposed project was assumed to be built out at year 2045, which is consistent with the traffic impact analysis (TIA) prepared for the proposed project (Appendix K). The proposed project land use assumptions used in CalEEMod are presented in Table 4.2-4.

Table 4.2-4. Proposed Project Development Land Use Summary

Land Use From TIA	CalEEMod Land Use Surrogate	Modeled Sizes Based on the Proposed Project
Single-Family Detached Housing	Single Family Housing	3,153,800 sf (1,230 units)
Multifamily Housing Low Rise	Apartments Low Rise	146,167 sf (162 units)
Senior Adult Housing	Retirement Community	2,550,000 sf (1,385 units)
Shopping Center	Regional Shopping Center	39,000 sf
General Office Building	General Office Building	272,000 sf
Medical – Dental Office Building	Medical Office Building	136,000 sf
Elementary School	Elementary School	500 Students
Soccer Complex	City Park	8 Acres (7 fields)
	Total	**6,296,967 sf (2,777 units)**

Sources: Draft Valley's Edge Specific Plan, July 2021; Water Supply Assessment for the City of Chico's Valley's Edge Specific Plan, April 2020.

Wood and natural gas hearths (fireplaces) from CalEEMod were adjusted to specify no hearths.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. It was assumed that the proposed project would be "all-electric" per Reduction Measure E-2 included within the City's 2021 CAP Update and consistent with Section 4.7, Greenhouse Gases (City of Chico 2021). Therefore, no wood stoves or natural gas hearths were assumed for any of the residential units. Default values were assumed for chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (California Air Pollution Control Officers Association (CAPCOA) 2021). Consumer product VOC (i.e., ROG) emissions are estimated in CalEEMod based on the floor area of nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For the asphalt surface land use assumed for the proposed project, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of estimated parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and BCAQMD Rules 230 (Architectural Coatings) and 231 (Cutback and Emulsified Asphalt) would limit VOC emissions from use of asphalt and architectural coatings. The model default reapplication rate of

10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the nonresidential surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating and assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating.

For the other asphalt surfaces assumed for the proposed project, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2021).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per residential dwelling unit per day and grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. For Butte County, the average annual "summer" days are assumed to be 180 days per year in CalEEMod (CAPCOA 2021).

Energy

As represented in CalEEMod, energy sources include emissions associated with building electricity. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. The modeling reflects that the proposed project would be "all-electric," built without natural gas per Reduction Measure E-2 included within the City's draft CAP Update and consistent with Section 4.7, Greenhouse Gases (City of Chico 2021).

CalEEMod default values for energy consumption, which assume compliance with the 2019 Title 24 Building Energy Efficiency Standards, which were applied for the proposed project analysis. The 2019 Title 24 Building Energy Efficiency Standards became effective on January 1, 2020. Per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings. The first-year savings for newly constructed non-residential buildings, are 197 gigawatt hours (GWh) of electricity, 76.6 megawatt (MW) of demand, and 0.27 million therms of gas, representing reductions from the 2016 Title 24 standard of 10.7%, 9%, and 1%, respectively. The first-year savings for single-family homes are 596 GWh of electricity, 50.4 MW of demand and 4.42 million therms of gas. For low-rise multi-family buildings, the first-year electricity savings are 91 GWh, 4.1 MW of demand, and 0.25 million therms of gas. On a percent savings basis compared to the 2016 standards, the single-family savings are 4% of electricity, 15% of demand and 9% of gas. For low-rise multi-family, savings are 2% of electricity, 8% of demand and 5% of gas.

Mobile Sources

Mobile sources for the proposed project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2020.4.0, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC, version 2017, was adjusted based on City specific traffic data. The CalEEMod default fleet mix in the model run contains too high a proportion of heavy-duty (HHD) trucks (8.7%) to accurately model the operational phase of the project. The mix of land uses for the proposed project would generate traffic more similar to a collector street in the City. Based on City traffic samples a HHD mix of 0.12% and a mid-size (i.e., medium heavy-duty vehicles, other buses, urban buses, school buses, and motorhomes) vehicle mix of 1.8% is appropriate for the project area.

Trip generation rates for the proposed project were based on the TIA prepared for the proposed project (Appendix K). The weekday trip generation rate matches the TIA for all land uses. For the proposed project, the assumed Saturday and Sunday trip rates were adjusted in proportion to the CalEEMod default weekday, Saturday and Sunday trip rates and the TIA weekday trip rate. Trip rate assumptions for the proposed project are shown in Table 4.2-5.

Table 4.2-5. Proposed Project Trip Rate Assumptions

Land Use	Trip Rate		
	Weekday[a]	*Saturday*[b]	*Sunday*[b]
Per Dwelling Unit			
Single Family Housing	6.76	6.83	6.12
Apartments Low Rise	5.81	6.46	4.98
Retirement 55+ Community	3.39	2.87	2.76
Per 1,000 Square Feet			
Shopping Center	64.60	78.92	36.11
General Office Building	6.51	1.45	0.62
Medical Office Building	27.67	6.81	1.13
Elementary School	1.50	0.00	0.00
Per Acre			
Soccer Complex (for the Community Park)	49.69	124.85	139.50

Source: Appendix K.
Notes:
[a] Weekday trip rates are from the proposed project TIA and reflect internal trip capture and reductions from other transportation modes.
[b] Saturday and Sunday trip rates were either adjusted in proportion to the CalEEMod default weekday, Saturday and Sunday trip rates and the TIA weekday trip rate or assumed to be the same as the weekday trip rate.

Stationary Sources and Other Sources of Emissions

Based on the type of land uses that would be developed under the proposed project, there may be additional emission sources that are either not captured in CalEEMod or for which specifics are not available at this planning stage to accurately estimate emissions using CalEEMod. The largest source of operational emissions estimated that would be generated by the proposed project would be from gasoline-powered mobile trips. Operational emissions generated by the proposed project were estimated based on the availability of project specific information (i.e., number of dwelling units, square footage, acreage, and number of vehicle trips) and regulatory requirements. However, potential additional sources of criteria air pollutants and TAC emissions may include stationary sources such as emergency generators and various VOC sources. Because specifics are not available to accurately estimate emissions from these anticipated sources, associated emissions are not included in the estimated emissions presented herein. However, all stationary sources developed under the proposed project (rated at over 50 horsepower [HP]) would be required to comply with applicable BCAQMD rules and regulations and would be required to obtain a permit to operate from the BCAQMD. Furthermore, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, and there are currently no modeling tools that could provide reliable and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air quality management district or pollution control district may be relied upon to determine whether the project would have a significant impact on air quality.

The BCAQMD has adopted the CEQA Air Quality Handbook, which contains thresholds of significance used to access air quality related impacts from construction and operations of a project. The quantitative air quality analysis provided herein applies the BCAQMD thresholds identified below to determine the potential for the proposed project to result in a significant air quality impact under CEQA (BCAQMD 2014). Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4.2-6 are exceeded.

Table 4.2-6. Butte County Air Quality Management District Air Quality Significance Thresholds

Criteria Pollutants Thresholds	
Pollutant	*Construction*
ROG	137 lbs/day or 4.5 tons/year
NO_x	137 lbs/day or 4.5 tons/year
PM < 10 microns (PM_{10} or smaller)	80 lbs/day
Pollutant	*Operational*
ROG	25 lbs/day
NO_x	25 lbs/day
PM	80 lbs/day
Toxic Air Contaminants	
Pollutant	*Threshold*
TACs	Maximum incremental cancer risk ≥ 10 in 1 million Chronic and acute hazard index ≥ 1.0 Hazard Index Ambient Diesel $PM_{2.5}$ ≥ 0.3 ug/m^3 annual average

Source: BCAQMD 2014.
Notes: BCAQMD = Butte County Air Quality Management District; ROG = reactive organic gases; NOx = oxides of nitrogen; PM = particulate matter; TAC = toxic air contaminant; lbs/day = pounds per day; μg/m3 = micrograms per cubic meter.

Project Impacts

4.2-1 The proposed project could conflict with implementation of air quality plans.

As previously discussed, the project site is under the jurisdiction of the BCAQMD within the SVAB. The SVAB is designated nonattainment for both the national and California ozone standards. Accordingly, the BCAQMD, along with other local air districts in the SVAB, is required to comply with and implement the State Implementation Plan (SIP) to demonstrate when and how the region can attain the national O_3 standards. As such, the BCAQMD, along with the other air districts in the region, prepared the *Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Plan* (BCAQMD 2018 - 2018 Plan). The 2018 Plan addresses attainment of the CAAQS for O_3 (BCAQMD 2018). The latest plan was adopted by the BCAQMD in coordination with the air quality management districts and air pollution control districts for the counties located in the northern portion of the Sacramento Valley including Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties, and incorporates land use assumptions and travel demand modeling provided by the BCAG. The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with federal and state air quality standards. In general, projects are considered consistent with, and would not conflict with or obstruct implementation of the air quality plan if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the air quality management plan.

Demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) were developed by BCAG for its 2016 RTP/SCS (BCAG 2016) based on general plans for cities in Butte County. The 2018 Plan relies on the land use and population projections provided in the RTP/SCS, which is generally consistent with local plans; therefore, the air quality management plans are generally consistent with local government plans (e.g., General Plans).

Implementation of the proposed project would result in a change in land use as compared to existing conditions, but would be consistent with the City's intent to develop the site for a mix of commercial, public facilities and residential uses. The City's 2030 General Plan designates five new growth areas or special planning areas within the City's SOI. The project site is designated in the General Plan as Special Planning Area 5 (SPA-5) or the Doe Mill/Honey Run SPA. The General Plan includes a conceptual land use plan for this area that includes a mix of residential commercial, public facilities and parks and open space uses. The proposed project's land uses and development assumptions are generally consistent with the City's General Plan as the designations for the site would still permit a variety of residential, commercial, and open space uses. The VESP implements the City's 2030 General Plan because it is in alignment with the guiding principles, goals, actions and overall land use concept set forth in the General Plan.

Once annexed to the City the project site's pre-zoning would facilitate development consistent with the proposed VESP land uses. The proposed project has generally been designed to be consistent with the City's density expectations as set forth by the General Plan. Therefore, the proposed project would not result in significant population growth that would substantially exceed BCAG growth projections for the County.

Furthermore, to address the criterion of whether the proposed project would exceed the BCAQMD significance thresholds for O_3 precursors and potentially delay the timely attainment of the ambient air quality standards or interim emission reductions of the 2018 Plan, an air quality modeling analysis that identified the proposed project's impact on air quality was performed and is presented under Impact 4.2-2. As discussed below, the proposed project would result in long-term operational emissions that would exceed the respective BCAQMD

significance thresholds for ROG, NO_x, and PM_{10} resulting in a significant impact associated with the violation of an air quality standard. Because the proposed project could increase the frequency or severity of existing air quality violations or cause or contribute to new violations, the proposed project would conflict with or obstruct implementation of the 2018 Plan and this impact would be considered **significant**.

Mitigation Measures

See Mitigation Measures AQ-2 through AQ-5. Compliance with these mitigation measures would reduce operational criteria air pollutant emissions and would reduce air quality operational impacts primarily associated with ROG, NO_x, and PM_{10}, to a level of **less than significant**.

AQ-1: Implement Mitigation Measures AQ-2 through AQ-5, which would reduce operational-related energy consumption and mobile air quality emissions.

4.2-2 The proposed project could result in a cumulatively considerable net increase in criteria pollutants.

Construction and operation of the proposed project would result in emissions of criteria air pollutants from mobile, area, energy and/or stationary sources, which may cause exceedances of national and California ambient air quality standards or contribute to existing nonattainment of ambient air quality standards. The following discussion identifies potential short-term construction and long-term operational impacts that would result from implementation of the proposed project.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the BCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

In considering cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SVAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the BCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SVAB. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

As discussed in Section 4.2.1 (Environmental Setting), the SVAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SVAB, including motor vehicles, off-road equipment, and commercial and industrial facilities.

Construction Emissions

Construction of the proposed project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing wind and weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

As discussed in Section 4.2.3, Methods of Analysis (Construction Emissions), criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during each year of construction (2022 through 2043). Construction schedule assumptions, including phase type, duration, and sequencing, were based on CalEEMod default values and is intended to represent a reasonable scenario in the absence of proposed project-specific information.

Implementation of the proposed project would generate criteria air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The proposed project would be required to comply with BCAQMD Rules 200 (Nuisance) and 205 (Fugitive Dust) to control emissions of fugitive dust during the grading activities. Standard construction practices that were assumed to be employed to reduce fugitive dust emissions, and were quantified in CalEEMod, include watering of the active sites two times per day depending on weather conditions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce ROG emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of BCAQMD Rules 230 (Architectural Coatings) and 231 (Cutback and Emulsified Asphalt).

Table 4.2-7 presents the estimated maximum daily construction emissions generated during construction of the proposed project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B.

Table 4.2-7. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions by Year - Unmitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2022	1.41	12.83	11.44	0.03	7.67	2.49
2023	3.93	38.68	29.76	0.07	4.60	2.99
2024	2.93	13.87	24.29	0.07	4.47	1.44
2025	2.73	13.21	23.11	0.07	4.43	1.39
2026	70.07	12.99	22.14	0.06	4.42	1.39
2027	70.04	38.10	68.26	0.10	4.61	2.96
2028	4.40	38.10	38.23	0.10	4.61	2.96
2029	3.45	17.47	28.73	0.10	7.43	2.22
2030	3.34	15.64	28.22	0.10	7.25	2.06
2031	3.14	15.44	27.38	0.10	7.25	2.05
2032	69.03	15.28	26.69	0.09	7.24	2.05
2033	69.00	20.20	32.66	0.11	4.06	2.24
2034	2.14	12.41	21.16	0.07	5.42	1.55
2035	2.02	12.14	20.81	0.07	5.40	1.53
2036	2.02	12.14	20.81	0.07	5.40	1.53
2037	2.02	12.14	20.81	0.07	5.40	1.53
2038	71.88	12.14	20.81	0.07	5.40	1.53

Table 4.2-7. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions by Year - Unmitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2039	4.64	14.52	31.96	0.11	6.86	3.24
2040	84.74	5.92	12.78	0.03	1.65	0.48
2041	84.74	1.00	2.93	0.01	0.27	0.08
2042	4.37	12.69	31.63	0.11	4.19	1.91
2043	57.35	11.59	31.63	0.11	3.55	1.88
Maximum Daily Emissions	**84.74**	**38.68**	**68.26**	**0.11**	**7.67**	**3.24**
BCAQMD threshold	*137*	*137*	*N/A*	*N/A*	*80*	*80*
Threshold exceeded?	**No**	**No**	**N/A**	**N/A**	**No**	**No**

Source: See Appendix B for complete results.
Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter BCAQMD = Butte County Air Quality Management District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for compliance with BCAQMD Rule 205 (Fugitive Dust), assuming the watering of active sites twice per day.

As shown in Table 4.2-7, maximum daily construction emissions associated with the proposed project would not exceed the BCAQMD significance thresholds for ROG, NO_x, PM_{10} or $PM_{2.5}$. Standard construction measures would be required for construction activities associated with project development. The BCAQMD CEQA Handbook (2014) provides best practice measures recommended by the BCAQMD to minimize fugitive dust during construction. Measures that would be required by BCAQMD Rules 200 (Nuisance) and 205 (Fugitive Dust) to control emissions of fugitive dust include the following:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

As described in Section 4.2.2, the VESP Design Guidelines also include actions which would help reduce air quality emissions resulting from construction of the proposed project. Specifically, DES-2.4 and DES-2.5 require the use of efficient construction methods, locally sourced products, durable materials and materials from renewable resources and minimizing and recycling of construction waste; and DES-2.5 and DES-2.14 require use of low/zero VOC certified material selection and active fresh air exchange and effective ventilation for indoor areas and building materials including paints, floor finishes and insulation that are low/zero VOC certified.

In addition to the above measures, Grading Plans prepared for the project would be submitted to the BCAQMD for review prior to the start of any construction activity for which a grading permit is required from the City to evaluate the potential for fugitive dust to be generated. Because estimated project emissions would not exceed the BCAQMD thresholds for any criteria air pollutant. Impacts associated with project generated construction criteria air pollutant emissions would be **less than significant**.

Operational Emissions

Operation of the proposed project would generate ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including gasoline-powered vehicle trips; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment. Since the proposed buildings would be all-electric, no natural gas would be combusted during operation of the buildings and no associated emissions would be generated. As discussed in Section 4.2.3, Methods of Analysis (Operational Emissions), pollutant emissions associated with long-term operation of the proposed project was quantified using CalEEMod. Mobile source emissions were estimated in CalEEMod based on project trip rates. CalEEMod default values were used to estimate emissions from area and energy sources where more recent data was not available for the proposed project.

Table 4.2-8 presents the maximum daily area and mobile source emissions associated with operation of the proposed project in 2045. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix B.

Table 4.2-8. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
Area	132.86	2.63	228.20	0.01	1.27	1.27
Mobile	52.52	37.95	457.07	0.98	137.93	37.01
Total	**185.39**	**40.59**	**685.27**	**0.99**	**139.20**	**38.2**
BCAQMD threshold	*25*	*25*	*N/A*	*N/A*	*80*	*80*

Table 4.2-8. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions - Unmitigated

Emission Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
ThresholdExceeded?	Yes	Yes	No	No	Yes	No

Source: See Appendix B for complete results.
Notes: ROG = reactive organic gases; = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; BCAQMD = Butte County Air Quality Management District.
Totals may not sum due to rounding.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.
The proposed project emissions reflect operational year 2045.
Limited to sources captured in CalEEMod.

As shown in Table 4.2-8, the combined daily area and mobile source emissions from the proposed project would exceed the BCAQMD operational thresholds for ROG, NO_x, and PM_{10}. The VESP includes various actions and policies, which would help reduce air quality emissions resulting from operation of the proposed project, as discussed in Section 4.2.2, above. Specifically, the proposed project would further reduce mobile emissions with through compliance with VESP actions PROS-3.1, LU-2.8, C-1.1, C-1.2, C-1.7, which would promote a multimodal transportation network (i.e., walking, bicycling, transit, and vehicles) throughout the plan area. Actions C-1.5, C-1.7, and C-1.8 would also promote alternative methods of transportation by requiring the proposed project to develop NEV and EV infrastructure. In addition, Design Guideline action DES-2.5 would reduce ROG emissions by requiring use of low/zero VOC certified materials.

The emission reductions associated with the policies and actions described in Section 4.2.2 have been quantified in CalEEMod to the extent feasible (e.g., use of low-VOC coatings and use of PV on all residential buildings); however, most of the measures are not quantifiable and/or the extent to which some measures would apply to the proposed project is unknown.

Further, there are several limitations on accurately predicting future air emissions from the proposed project for the model year (2045). These limitations mainly include, but are not limited to the following:

- The assumptions made for the start date and phased build-out of the project, including timing for development of the elementary school and commercial uses in the Village Core. A series of conservative assumptions were made for the purposes of this analysis; actual emissions rates for the project phases cannot be accurately predicted until the specific project phases and site design proposals become known.
- Regulatory changes that will be enacted over the next decades to meet State and federal-mandated goals for greenhouse gas emissions reductions. Rule-making is ongoing regarding the main sources of air emissions associated with the project (e.g., vehicle fuel efficiency standards, zero-emission vehicle mandates, strengthened consumer products standards, prevalence of very low-VOC paints, etc.).
- The unknown degree to which emergent technologies (such as remote work, zero-emission vehicle use, automation of certain jobs, etc.), lead to reductions in air emissions from petroleum combustion. The air emissions modeling conducted for this analysis is limited to the features incorporated into the 2020 version of CalEEMod.

These uncertainties result in the need to both interpret the modeling results as the worst-case scenario for future project emissions and build flexibility into the mitigation applied at this stage of the long-term project.

For projects where the BCAQMD's standard mitigation is not adequate to reduce criteria pollutant emissions to less than significant levels, the BAQMD CEQA Handbook recommends that the project applicant (or developer) either establish an off-site mitigation program within Butte County, coordinated through BCAQMD, or participate in an Off-site Mitigation Program by paying the equivalent amount of money equal to the project contribution of pollutants (ROG and NOx).

Even assuming compliance with the various policies and actions and regulatory requirements, impacts associated with the proposed project-generated operational criteria air pollutant emissions would be **significant**.

Summary

As discussed above, prior to mitigation, the proposed project would result in emissions that would exceed the BCAQMD thresholds for ROG, NO_x, and PM_{10} during operation. Notably, since the emission-based thresholds used in this analysis were established to provide project-level estimates of criteria air pollutant quantities that the SVAB can accommodate without affecting the attainment dates for the ambient air quality standards, and since the EPA and CARB have established the ambient air quality standards at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety, elevated levels of criteria air pollutants above adopted thresholds as a result of the proposed project's operation could cause adverse health effects associated with these pollutants. (The effects typically associated with unhealthy levels of criteria air pollutant exposure are described in Section 4.2.1, Pollutants and Effects, above.) However, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or potential additional nonattainment days, and there are currently no modeling tools available that could provide reliable and meaningful information regarding health effects from criteria air pollutants generated by individual projects. As such, impacts associated with criteria air pollutant emissions generated during operation of the proposed project would be considered **significant**.

Mitigation Measures

The following mitigation measures would reduce criteria air pollutant and GHG emissions generated during operation of the proposed project. Mitigation Measures AQ-2 and AQ-3 would reduce operational-related criteria air pollutant emissions associated with mobile and energy sources. Mitigation Measure AQ-4 would require the project developer to either establish an off-site mitigation program within Butte County, coordinated through BCAQMD, or participate in an Off-site Mitigation Program by paying the equivalent amount of money equal to the project's contribution of pollutants (ROG, NO_x and PM), as recommended by the BCAQMD CEQA Handbook. With implementation of these measures, the project's net emissions would be below the identified thresholds, so the impact would be **less than significant.**

AQ-2: **Idling Restriction.** For commercial land uses that include truck idling, idling for periods of greater than five (5) minutes shall be prohibited. Signage shall be posted at truck parking spots, entrances, and truck bays advising that idling time shall not exceed five (5) minutes per idling location. To the extent feasible, the tenant shall restrict idling emission from trucks by using auxiliary power units and electrification. Electrical power connections shall be installed at loading ducks so that TRUs (Transport Refrigerated Units) can be plugged in when stationary.

AQ-3: **Energy Conservation.** The City shall ensure the following energy conservation measures are incorporated into all proposed building plans, as applicable:

(a) Install Energy Star rated heating, cooling, lighting, and appliances.

(b) Outdoor lighting shall be light emitting diodes (LED) or other high-efficiency lightbulbs.

(c) Provide information to future residents through handouts to be provided upon occupancy on energy efficiency, energy efficient lighting and lighting control systems, energy management, and existing energy incentive programs.

(d) Non-residential structures shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof.

(e) Outdoor pavement, such as walkways and patios, shall include paving materials with 3-year SRI of 0.28 or initial SRI of 0.33.

(f) Residential homes shall include a modest cool roof, defined as Cool Roof Rating Council (CRRC) Rated 0.15 aged solar reflectance and 0.75 thermal emittance.

(g) Use of Heating, Ventilation and Air Conditioning (HVAC) equipment with a Seasonal Energy Efficiency Ratio (SEER) of 12 or higher.

(h) Install complete solar water heating systems.

(i) Maximize the use of natural lighting and include daylighting (e.g., skylights, windows) in rooms with exterior walls that would normally be occupied.

(j) Include high-efficacy artificial lighting in at least 50% of unit fixtures.

(k) Residential homes shall be equipped with outdoor electric outlets in the front and rear of the structure to facilitate use of electrical lawn and garden equipment.

AQ-4: **Purchase Offsets.** Prior to the City's approval of a final map for a project phase which would result in project-wide emissions exceeding 25 lbs/day of ROG or 25 lbs/day of NO_x or 80 lbs/day of PM_{10}, the project developer shall participate in an Offsite Mitigation Program, based on the Butte County Air Quality Management District (BCAPCD) CEQA Handbook, by paying the equivalent amount of money, which is equal to the contribution of pollutants (ROG, NO_x, and PM) for that final map phase which exceeds the BCAQMD thresholds of significance. Final details are to be approved by the BCAQMD and City for calculating the payments to the Off-site Mitigation Program.

AQ-5: Implement the Transportation Demand Management program included in Mitigation Measure TRAF-2.

4.2-3: The proposed project could expose sensitive receptors to substantial pollutants.

Toxic Air Contaminants

TACs are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. During Project construction, DPM would be the primary TAC emitted from diesel-fueled equipment and trucks. The following measures are required by State law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-Road Diesel Vehicles (Cal. Code Regs., tit. 13, chapter 9, § 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible (Cal. Code Regs., tit. 13, chapter 10, § 2485).

As previously discussed, the closest off-site sensitive receptors include residential uses adjacent to the project site's boundary to the north and south. In addition, components of the proposed project would include residential land uses and age-restrictive housing, which would be developed and occupied as future phases of the project are constructed.

DPM emissions would be emitted from off-road equipment operations and heavy-duty trucks during project construction activities. Such activities could result in TAC exposure to existing or future sensitive land uses during construction. Off-road construction equipment and commercial trucks are subject to CARB Airborne Toxic Control Measures (ATCMs) to reduce DPM emissions. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should also be limited to the period/duration of activities associated with the project. Total project construction is anticipated to occur over a temporary period over the course of 21 years, from 2022 through 2043. Project construction would be multi-phased and would occur in different locations at different times, thus limiting the exposure to existing sensitive receptors. Furthermore, it is unlikely that heavy construction equipment would operate within in close proximity to the existing sensitive receptors for an extended period of time as the greater portion of project construction activities would occur in undisturbed areas away from the project's boundary. However, the levels of potential emissions in relation to the location of sensitive receptors cannot be estimated with a level of accuracy due to unknown construction specifics (i.e., DPM from potential equipment and haul trucks). As such, potential health risk of exposing sensitive receptors to construction-generated TAC emissions, primarily DPM, would be **significant**.

With regard to long-term project operation, the proposed project could result in TAC emissions from stationary sources such as on-site generators; however, the specifics from such sources are unknown at the time of this analysis. On-site emergency generators would be required to comply with the BCAQMD permitting process, which would ensure that potential health risks would be less than significant before issuing a permit to operate. Therefore, it is anticipated the proposed project would not result in exposure of sensitive receptors to substantial TAC concentrations during long-term operations and impacts would be **less than significant**.

Health Effects of Carbon Monoxide

Mobile source impacts occur on two scales of motion. Regionally, proposed project-related travel would contribute to regional trip generation and increase the total VMT within the local airshed and the SVAB. Locally, project generated traffic would be added to the City's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions technology at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SVAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. Construction activities associated with buildout of the proposed project would be temporary and would not be considered a source of daily, long-term mobile-source emissions. The proposed project would result in additional vehicle trips within the City resulting from buildout of the VESP. However, the proposed project would reduce VMT by locating land uses at the westerly edge of the project site, directly accessible from the main collector roadway and the Class I trail system facilitating on and off-site connectivity. The proposed project would also promote non-vehicular travel by creating a network of Class I trails and improved surface trails to enable safe and efficient routes of pedestrian and bicycle travel between residential areas and the future school, parks, shopping areas, services and employment. As a result of a 1998 SIP revision approved by EPA, Butte County was redesignated from nonattainment to attainment with a Maintenance SIP for CO. In 2007, the 1998 Maintenance SIP was updated by CARB and approved by EPA for the second decade of the maintenance period. Conformity applies for CO through 2018. In order to show conformity for CO, BCAG must show that future emissions will be less than the CO emissions budget assigned to Butte County. Butte County's emissions budget of 80-tons per day is specified in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide*. CO emissions in Butte County in 2003, 2010, and 2018 were 164, 134, and 113 tons per day. These levels are significantly lower than the 1993 levels of 232 tons per day that resulted in attainment. In addition, the maximum background CO levels in Butte County in years preceding the 2018 Camp Fire, as shown in Table 4.2-2, are approximately 5% and 16% of the 1-hour and 8-hour NAAQS and CAAQS and would be expected to improve further due to due to turnover of older vehicles and introduction of cleaner fuels. Based on these considerations, the proposed project would result in a **less-than-significant impact** to air quality with regard to potential CO hotspots.

Health Effects of Criteria Air Pollutants

As demonstrated above, construction of the proposed project would not result in emissions that exceed the BCAQMD significance thresholds for any criteria air pollutants, however, long-term operations of the proposed project would exceed the ROG, NO_x, or PM_{10} emissions thresholds. ROG emissions would be associated with motor vehicles, construction equipment, and architectural coatings, as shown in Table 4.2-8. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, the proposed project would comply with BCAQMD Rule 230, which restricts the VOC content of coatings through implementation of low/zero VOC certified materials including paints, floor finishes and insulation.

ROG and NO_x are precursors to O_3, for which the County is designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of ROG and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SVAB due to O_3 precursor emissions tend to be

found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the precursor emissions would occur because exceedances of the O_3 AAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. As discussed previously, ROG and NO_x emissions associated with operations would be reduced to less than significant with the inclusion of Mitigation Measures AQ-2 through AQ-5.

Health impacts that result from NO_2 and NO_x include respiratory irritation. The proposed project's operations would generate NO_x emissions that would exceed the operational BCAQMD mass daily thresholds prior to mitigation; resulting in a **significant impact.** However, Mitigation Measures AQ-2 through AQ-6 would reduce air emissions from construction and operation of the proposed project such that the project would not significantly contribute to possible future exceedances of the NAAQS and CAAQS for NO_2 concentrations in the area.

The associated potential for CO hotspots were discussed previously and are determined to be a less-than-significant impact. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction of the proposed project would not exceed the BCAQMD thresholds for PM_{10} or $PM_{2.5}$; however, operation of the proposed project would exceed thresholds for PM_{10} prior to mitigation resulting in a **significant impact**. As shown above, with the inclusion of Mitigation Measures AQ-2 through AQ-5, the proposed project's potential contribution of particulate matter (PM_{10}) during operation would not exceed the BCAQMD significance thresholds.

Summary

In summary, operations of the proposed project would result in exceedances of the BCAQMD significance thresholds for ROG, NO_x, and PM_{10} as presented in Table 4.2-9. Therefore, the potential health impacts associated with these criteria air pollutants and are considered **significant**.

Mitigation Measures

Implementation of Mitigation Measures AQ-6 and AQ-7 are required to reduce the potential for the proposed project to expose sensitive receptors to TACs and the associated health risk. All new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures, if necessary. Therefore, after implementation of these mitigation measures, the proposed project's impact related to exposure of sensitive receptors to TAC would be less than significant. In addition, implementation of Mitigation Measures AQ-2 through AQ-5 would reduce operational-related energy consumption and mobile air quality emissions primarily associated with ROG, NO_x, and PM_{10} emissions to a level of **less than significant.**

AQ-6: Construction Equipment Emissions Reductions. The following measures shall be incorporated into the proposed project to reduce construction criteria air pollutant emissions, including ROG, NOx, PM10, and PM2.5, generated by construction equipment used for future development projects implemented under the proposed VESP:

(a) For off-road equipment with engines rated at 75 horsepower or greater, no construction equipment shall be used that is less than Tier 4 Interim. An exemption from these requirements may be granted by the City in the event that the project developer documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment.[4] Before an exemption may be considered by the City, the project developer shall be required to demonstrate that two construction fleet owners/operators in the Sacramento Valley Region were contacted and that those owners/operators confirmed Tier 4 Interim or better equipment could not be located within the Sacramento Valley Region.

(b) Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions.

(c) Properly tune and maintain all construction equipment in accordance with manufacturer's specifications.

(d) Where feasible, employ the use of electrical or natural gas-powered construction equipment, including forklifts and other comparable equipment types.

(e) To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction.

AQ-7: **Health Risk Assessment Requirements.** Consistent with the California Air Resources Board's recommendations on siting new sensitive land uses, a formal health risk assessment shall be required if future uses include a large gas station, dry cleaner, or any other types of uses that could create TACs. Preparation of a health risk assessment by the project applicant may be required by the City under the following conditions:

(a) *Gasoline Dispensing Facilities*. For any large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) within 300 feet of a sensitive receptor. For any typical gas dispensing facility (with a throughput of less than 3.6 million gallons per year) within 50 feet of a sensitive receptor.

(b) *Dry Cleaners Using Perchloroethylene.* For any dry-cleaning operation within 300 feet of a sensitive receptor. For operations with three of more machines, consult with the Butte County Air Quality Management District for when a health risk assessment shall be prepared as the distance to the closest sensitive receptor may be less than 300 feet.

(c) *Other Sources of Toxic Air Contaminants*. For other sources of TACs (e.g., furniture repair or printing shops) the City shall evaluate the need to prepare a health risk assessment based on the types of TACs and the distance to sensitive receptors.

[4] For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded from a Tier 4 Interim to a higher tier (i.e., Tier 4 Final) or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards.

4.2-4 The proposed project could generate an increase in other emissions or odors.

The occurrence and severity of potential odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receiving location. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during proposed project construction. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the proposed project sites and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Typical sources of substantial operational odors include landfills, rendering plants, chemical plants, agricultural uses, wastewater treatment plants, and refineries which are not applicable to this project. Regarding operations, the proposed project would involve development of commercial (non-residential) and various types of housing (residential) uses. Typical odors generated from operation of the proposed project would include vehicle exhaust generated by residents, employees, and visitors traveling to and from the project site, through the periodic use of landscaping or maintenance equipment, odors from restaurants and from the temporary storage of typical solid waste (refuse). Any odors produced would be minimal and would be confined to the immediate vicinity. Overall, operation of the proposed project would not result in odors that would affect a substantial number of people and this impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The cumulative context of an air pollutant is dependent on the specific pollutant being considered. O_3 precursors are a regional pollutant; therefore, the cumulative context would be existing and future development within the entire SVAB. This means that O_3 precursors generated in one location do not necessarily have O_3 impacts in that area. Instead, precursors from across the region can combine in the upper atmosphere and be transported by winds to various portions of the SVAB. Consequently, all O_3 precursors generated throughout the SVAB are part of the cumulative context.

The geographic scope for the project's cumulative analysis includes the City of Chico and surrounding areas within the SVAB for O_3. The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and portions of Solano and Placer counties. The SVAB extends from south of Sacramento to north of Redding and is bounded on the west by the Coast Ranges and on the north and east by the Cascade Range and the Sierra Nevada.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would

be considered speculative and is not further evaluated.[5] The same is true for odors. The proposed project would not generate nuisance operational odors. Typically, odors are confined to areas around the source and would not combine with other odor sources creating a cumulative impact. Therefore, the potential for the project to contribute to a cumulative odor impact is not evaluated.

4.2-5 The proposed project could result in a cumulative impact related to air quality.

As the VESP is built out future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation if the project would exceed BCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the BCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to BCAQMD Rules 200 (Nuisance) and 205 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the BCAQMD. In addition, cumulative VOC emissions would be subject to BCAQMD Rules 230 (Architectural Coatings) and 231 (Cutback and Emulsified Asphalt). However, as presented in Table 4.2-8, the proposed project would result in the exceedance of the ROG, NO_x, and PM_{10} operational BCAQMD significance thresholds, as a result, the proposed project could potentially result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions.

The analysis for local CO hotspot impacts under Threshold 4.2-3 is a qualitative assessment that demonstrated a less-than-significant impact is inherently a cumulative analysis, and the cumulative impact would be less than significant. Because the proposed project would not include any non-permitted stationary sources of TACs onsite and any permitted emergency generators would only be used for maintenance and testing, it would not contribute to long-term health risk impacts in the project area. However, the project may result in short-term construction-related TAC emissions that, when combined with other TAC emissions could contribute to a health risk within the project area.

Based on the prior considerations, the project's contribution to the cumulative impact would be considerable resulting in a **significant contribution**.

Mitigation Measures

Implementation of Mitigation Measures AQ-2 through AQ-5 would reduce air quality operational impacts primarily associated with ROG, NO_x, and PM_{10} emissions to a level a level of **less than significant**.

4.2.4 References

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BCAQMD (Butte County Air Quality Management District). 2014. *CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review*.

[5] The State CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

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4.3 Biological Resources

4.3.0 Introduction

This section describes the existing biological resources conditions in the proposed Valley's Edge Specific Plan project site (VESP or proposed project) and vicinity, including the proposed off-site infrastructure, identifies associated regulatory requirements, and evaluates potential project impacts related to special-status species or their habitat, wetlands, migratory corridors, and consistency with habitat conservation plans associated with implementation of the proposed project. This section also identifies mitigation measures to avoid or substantially reduce any potential project impacts.

Comments received in response to the Notice of Preparation (NOP) relevant to biological resources include general concerns regarding potential project impacts to wetlands, trees, and plant and wildlife species, including Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) and vernal pool tadpole shrimp (*Lepidurus packardi*), and concerns regarding potential project effects on migratory corridors present onsite. These concerns are all addressed in this section. A copy of the NOP and comments received is included in Appendix A.

Biological resources discussed herein were identified through the review and compilation of existing biological technical information prepared for the project site. Existing documentation includes a Draft Delineation of Jurisdictional Waters for the Valley's Edge Project (Gallaway 2016), Biological Resource Assessment (Gallaway 2018), which collectively summarizes the results of at least 29 field surveys or assessments conducted at the site since 2006 by Gallaway Enterprises, May and Associates, and ECORP Consulting, Inc., and a Biological Resource Assessment assessing the off-site infrastructure (Gallaway 2020a) including a Draft Delineation of Jurisdictional Waters addressing the off-site infrastructure (Gallaway 2020b). Table 4.3-1 lists all the biological surveys and assessments conducted on the project site which are all included in Appendix C. Other sources cited throughout the section are listed in Section 4.3.4, References.

Table 4.3-1. Biological Field Survey Reports or Assessments Prepared for the Project

Field Survey or Assessment		
Date	*Document*	*Consultant*
2006	Wetland delineation (results presented in 2016 Draft Delineation of Jurisdictional Resources)	Gallaway Enterprises
2007	Wetland delineation (results presented in 2016 Draft Delineation of Jurisdictional Resources)	Gallaway Enterprises
2007	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
2008	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
3/24/2010	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
2012	Rare plant assessment (results presented in 2018 Biological Resources Assessment)	May and Associates
2013	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises

Table 4.3-1. Biological Field Survey Reports or Assessments Prepared for the Project

Field Survey or Assessment		
Date	*Document*	*Consultant*
2014	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
11/11/2014	Wetland delineation (results presented in 2016 Draft Delineation of Jurisdictional Resources)	Gallaway Enterprises
5/2015	2014-2015 Wet Season Branchiopod Survey. Valley's Edge Project (Appendix to 12/2018 BRA)	Gallaway Enterprises
1/14/2015	Wetland delineation (results presented in 2016 Draft Delineation of Jurisdictional Resources)	Gallaway Enterprises
1/19/2015	Wetland delineation (results presented in 2016 Draft Delineation of Jurisdictional Resources)	Gallaway Enterprises
2015	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
2016	Butte County meadowfoam survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
5/9/2016	Draft Delineation of Jurisdictional Waters of the United States, Valley's Edge Project, Butte County, California.	Gallaway Enterprises
9/13/2016	Dry season branchiopod survey (results presented in 2019 90-Day Report: Dry Season Surveys)	ECORP Consulting, Inc.
4/3/2017	Protocol-level botanical survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
4/4/2017	Protocol-level botanical survey (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
4/5/2017	Protocol-level botanical survey and habitat assessment (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
6/1/2017	Protocol-level botanical survey and habitat assessment (results presented in 2018 Biological Resources Assessment)	Gallaway Enterprises
12/2018	Biological Resource Assessment Aquatic and Terrestrial Wildlife, and Botanical Resources. Valley's Edge Project. Butte County, California.	Gallaway Enterprises
9/13/2019	90-Day Report: Dry Season Surveys for Federally Listed Branchiopods within the Valley's Edge Development, Butte County, California	Gallaway Enterprises
9/13/2019	Technical Memo: Post Fire Conditions within the Valley's Edge Development, Butte County, California	Gallaway Enterprises
2020	Biological Resource Assessment Aquatic and Terrestrial Wildlife, and Botanical Resources. Valley's Edge Off-site Infrastructure Project. Butte County, California	Gallaway Enterprises
2020	Draft Delineation of Jurisdictional Waters of the United States, Valley's Edge Off-site Infrastructure Project, Butte County, California	Gallaway Enterprises

Source: Appendix C.

4.3.1 Environmental Setting

This section provides information on the condition of natural resources in the region and project site, the extent of sensitive natural communities and critical habitat, presence or absence of jurisdictional wetlands, and the distribution and habitat requirements of special-status species that have been recorded either on the project site or in the project vicinity.

Regional Setting

The proposed project site is located within the Sacramento Valley geographic subdivision of the California Floristic Province (Jepson Flora Project 2020). Although this region primarily consists of agriculture and urban development, there are a variety of natural vegetation types also present, such as grasslands, vernal pools, riparian woodlands, and oak woodland. The proposed project site is located in northwestern Butte County, California where annual temperatures range from 20°F to 115°F, and the average annual precipitation is 20 inches (SMAQMD 2019). On average, the months with the highest rainfall are January and February, and July has the least precipitation (WRCC 2019). The proposed project site is located within the Comanche Creek subwatershed (Hydrologic Unit Code 180201580301) and the Butte Creek watershed (Hydrologic Unit Code 18020157).

Project Site Setting

The proposed project site consists of approximately 1,448 acres of mostly open space, located approximately 1.26 miles east of State Route (SR) 99 in unincorporated Butte County, adjacent to the southeast boundary of the City of Chico. A majority of the project site is leased out on a seasonal basis for winter cattle grazing. An area in the southwest portion of the site contains the remnants of a former ranch house foundation, barns and corrals. The Steve Harrison Memorial Bike Path forms the western boundary of the project site.

The proposed off-site water and sewer infrastructure is located south and west of the project site and includes the following roadway rights-of-way (ROW): E. 20th Street, Midway, Morrow Lane, Cramer Lane, Skyway, and Entler Avenue. There is one segment that is not within a roadway ROW south of Cramer Lane that traverses a former railroad alignment and valley oak woodland and highly disturbed grassland before going under Highway 99 to continue along Entler Avenue (see Figure 2-10 in Chapter 2). Most of the improvements are proposed within existing roadway ROW and are within areas that are highly degraded due to existing development and the previous installation of utilities. The utility infrastructure would require crossing the Butte Creek Diversion Channel along E. 20th Street and Skyway, and Comanche Creek along Cramer Lane.

Topography of the project site includes rolling foothills and ridges, and elevations onsite range from approximately 250 feet above mean sea level (AMSL) in the southwest corner of the project site to 580 feet AMSL in the southwest corner of the project site.

According to the Natural Resources Conservation Service (USDA 2019), 12 soil types are mapped within the project site: Xerorthents, tailings and 0 to 50% slopes; Redsluff gravelly loam, 0 to 2% slopes; Redtough–Redswale, 0 to 2% slopes; Doemill–Jokerst, 0 to 3% slopes; Doemill–Jokerst, 3 to 8% slopes, Jokerst–Doemill–Typic Haploxeralfs, 8 to 15% slopes; Jokerst-Doemill-Typic Haploxeralfs, 15 to 30% slopes; Doemill–Jokerst–Ultic Haploxeralfs, thermic complex, 8 to 15% slopes; Xerorthents, shallow–Typic Haploxeralfs–Rock outcrop, cliffs complex, 15 to 30% slopes; Xerorthents, shallow–Typic Haploxeralfs–Rock outcrop, cliffs complex, 30 to 50% slopes, Ultic Haploxeralfs–Rockstripe–Rock outcrop, cliffs, 50 to 70% slopes; and Clearhayes–Hamslough, 0 to 2% slopes. See Section 4.6, Geology and Soils, for an in-depth discussion of soils on the project site and a figure depicting their distributions.

Four ephemeral drainages transverse the project site on a roughly northeast to southwest orientation. Butte Creek is located south of the project site and Little Chico Creek is located north of the project site. Both Little Chico Creek and Butte Creek are tributaries to the Sacramento River. See Section 4.9, Hydrology, Water Quality, and Drainage, for an in-depth discussion of hydrology on the project site.

The off-site utilities would cross the Butte Creek Diversion Channel and Comanche Creek (Gallaway 2020).

Vegetation Communities and Land Cover Types

Gallaway Enterprises mapped three vegetation communities and two land cover types on the project site: annual grassland, blue oak foothill pine woodland, valley foothill riparian woodland, riverine, and barren. Within the off-site utilities area Gallaway identified Valley Foothill Riparian, Barren and Urban. Table 4.3-2 provides a breakdown of the vegetation communities or land cover types present and Figure 4.3-1 graphically depicts this information. A list of plant species recorded at the project site is included in a 2017 rare plant survey letter report attached to the Biological Assessment Report (Gallaway 2018) in Appendix C. A more detailed discussion is included below.

Table 4.3-2. Vegetation Communities and Land Cover Types on the Project Site

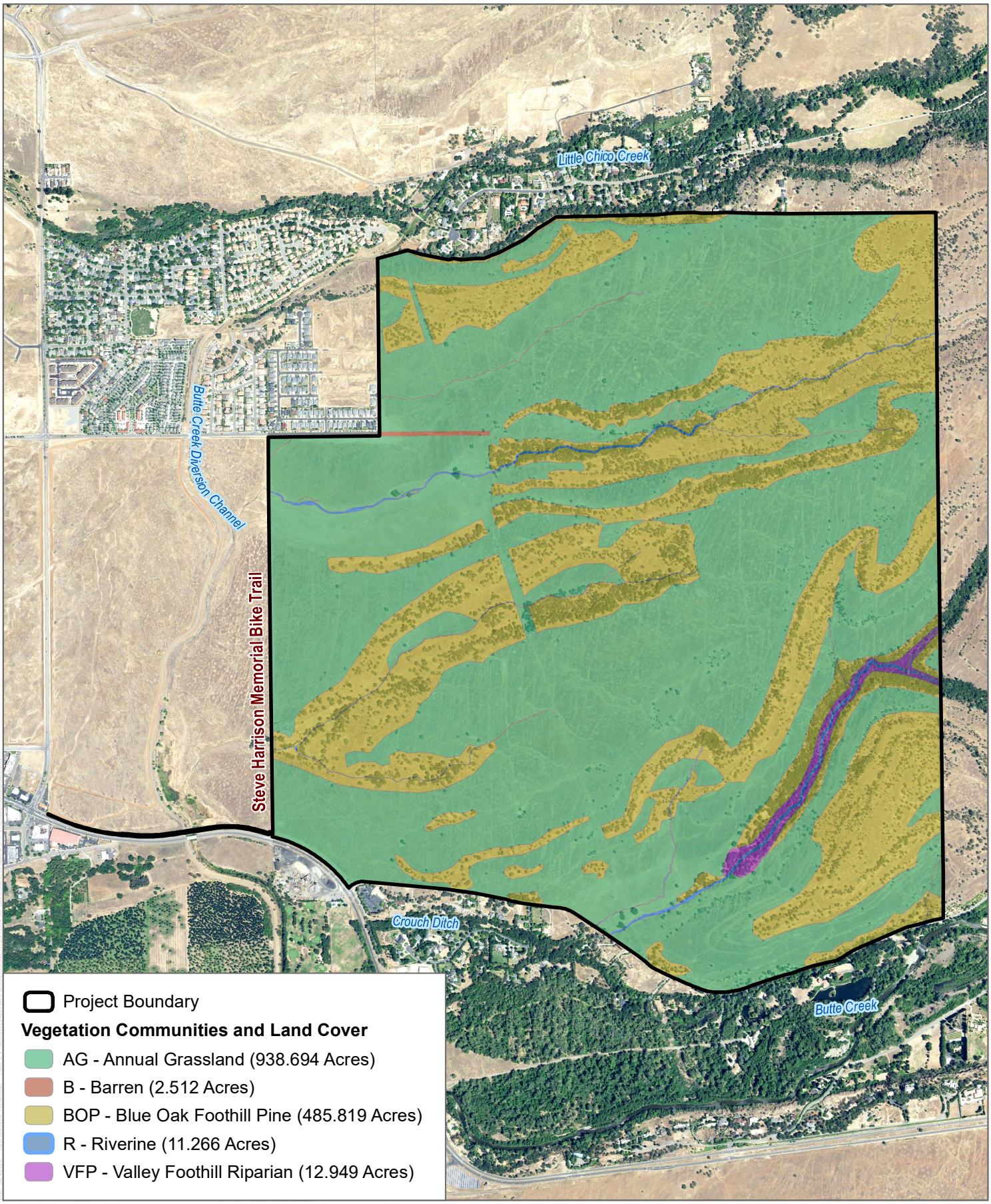
Vegetation Community or Land Cover Type	Acreage
Vegetation Communities	
Annual Grassland	938.694
Blue Oak Foothill Pine Woodland	485.819
Valley Foothill Riparian Woodland	12.949
Other Land Cover	
Riverine	11.266
Barren	2.512
Total	**1,451.240**

Source: Appendix C.

Vegetation Communities

Annual Grassland (938.694 acres). Annual grassland is the dominant vegetation community mapped on the project site and is located throughout the site. The tree and shrub layer is absent from this vegetation community. Dominant species in the herbaceous layer include medusahead grass (*Elymus caput-medusae*), soft brome (*Bromus hordeaceus*), wild oats (*Avena barbata*), and rat-tail six-weeks grass (*Festuca myuros*). Seasonal wetlands, vernal pools, vernal swales, and wet meadows also occur in this vegetation community. Other herbaceous species recorded in this vegetation community include Bidwell's knotweed (*Polygonum bidwelliae*) and woolly meadowfoam (*Limnanthes floccosa*), both of which are California Native Plant Society (CNPS) Rank 4 species (Gallaway 2018).

Blue Oak Foothill Pine Woodland (485.819 acres). Blue oak foothill pine woodland is generally mapped along the creeks and valleys on the project site. This vegetation community forms an open to intermittent tree layer dominated by blue oak (*Quercus douglasii*) with a lesser abundance of foothill pine (*Pinus sabiniana*) and interior live oak (*Quercus wislizeni*). Where present, the shrub layer includes buckbrush (*Ceanothus cuneatus*) and California coffeeberry (*Rhamnus californica*). Dominant species in the herbaceous layer include a similar assemblage of species found in the annual grassland community (described above).



SOURCE: ESRI 2019, Gallaway 2017, USGS NHD 2018

DUDEK

0 750 1,500 Feet

FIGURE 4.3-1

Vegetation Communities and Land Cover Types

Valley's Edge Specific Plan Project

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Valley Foothill Riparian Woodland (12.949 acres). Valley foothill riparian woodland is associated with two intermittent drainages, including Comanche Creek, located near the southeast corner of the project site. This vegetation community forms an intermittent to continuous tree layer consisting of blue oak and foothill pine, with a lesser abundance of interior live oak. The shrub and herbaceous layers in this community contain similar species to those found in the blue oak foothill pine community and/or annual grassland community, depending on the level of canopy cover.

Other Land Cover

Riverine (11.266 acres). Areas of the project mapped as riverine include multiple intermittent and ephemeral drainages that traverse the project site. Shield-bracted monkeyflower (*Erythranthe glaucescens*), a CNPS Rank 4 species, was observed growing along intermittent drainages on the project site (Gallaway 2018). Drainages and other aquatic resources mapped on the project site are discussed in further detail below.

Barren (2.512 acre). This land cover type generally consists of non-vegetated areas modified by human activities. A paved road associated with the onsite utility corridor is included in this land cover type, which is mapped in the southwestern portion of the project site. Also included in this land cover type is an approximately 0.25-mile-long stretch of unpaved, dirt Doe Mill Road, located near the northwestern portion of the project site.

Aquatic Resources

Gallaway Enterprises mapped seven types of aquatic resources (i.e., wetlands or other waters) on the project site which include: vernal pool, vernal swale, seasonal wetland, wet meadow, seasonal swale, intermittent drainage, and ephemeral drainage. Table 4.3-3 provides a breakdown of the aquatic resources present and Figure 4.3-2 graphically depicts this information. A more detailed discussion of aquatic resources is included below. The draft delineation report prepared for the project is included in Appendix C (Gallaway 2017).

Table 4.3-3. Aquatic Resources on the Project Site

Wetlands	**Total Acreage**	
Vernal Pool	0.997	
Vernal Swale	3.212	
Seasonal Wetland	0.211	
Wet Meadow	0.615	
Seasonal Swale	1.212	
Total Wetlands	**6.247**	
Other Waters	***Total Acreage***	***Linear Feet***
Intermittent Drainage	8.807	383,625.1
Ephemeral Drainage	2.376	103,918.7
Total Other Waters	**11.183**	**487,543.8**
Total Wetlands and Other Waters	**17.430**	—

Source: Appendix C. Gallaway 2017; ACOE 2018.

Wetlands

Vernal Pool (0.997 acres). Gallaway biologists mapped 81 vernal pools on the project site. Vegetation commonly found in the vernal pools onsite include perennial rye grass (*Festuca perennis*) and seaside barley (*Hordeum marinum gussoneanum*). Other less common vegetation includes annual hair grass (*Deschampsia danthonioides*), goldfields (*Lasthenia fremontii*), and loosestrife (*Lythrum* spp.). Vernal pools that persist for longer periods are generally dominated by popcorn flower (*Plagiobothrys stipitatus*), Coyote thistle (*Eryngium castrense*), and dwarf woollyheads (*Psilocarphus brevissimus*). A majority of the vernal pools on the project site are located on thin soils over volcanic mud flow and therefore exhibit flashy, or short ponding durations. Vernal pools on the project site provide foraging and/or breeding habitat for a variety of wildlife, such as vernal pool branchiopods (e.g., tadpole and fairy shrimp), ground-nesting bees, amphibians (e.g., western toad and Sierran tree frog), and many species of birds (further details below).

Vernal Swale (3.212 acres). Gallaway biologists mapped 22 vernal swales on the project site. Vegetation found in vernal swales onsite is similar to those found in the vernal pools onsite (discussed above). These swales convey water during the wet season and are unlikely to hold water for long periods like vernal pools. Vernal swales provide habitat for many wildlife species, although short ponding or saturation durations and/or excessive flow velocities likely preclude these features from supporting vernal pool branchiopods.

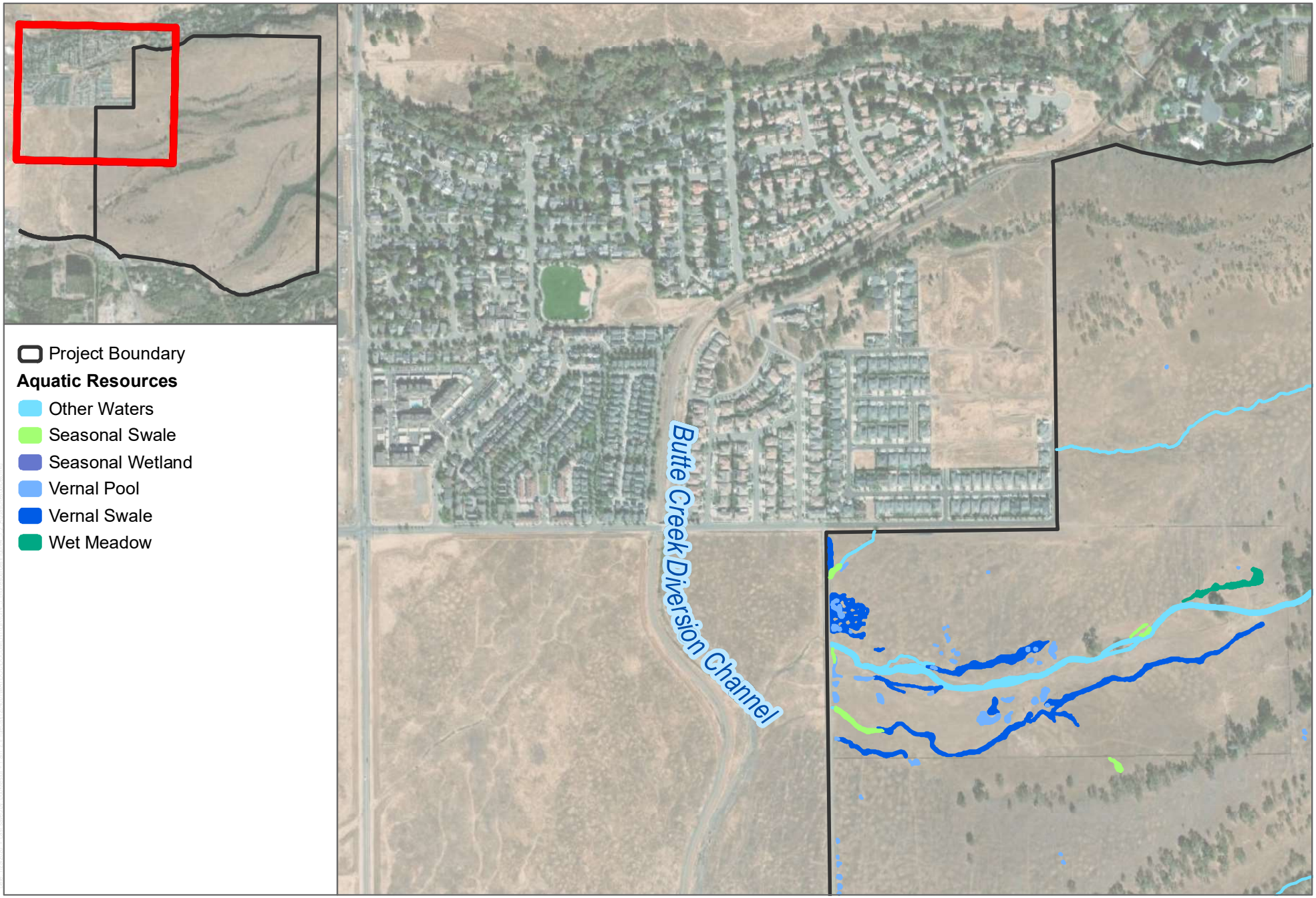
Seasonal Wetland (0.211 acres). Gallaway biologists mapped five seasonal wetlands on the project site. Vegetation identified in season wetlands onsite include rough cocklebur (*Xanthium strumarium*), California mugwort (*Artemisia douglasiana*), nut grass (*Cyperus esculentus*), and Dallis grass (*Paspalum dilatatum*). These wetlands typically only hold water during the wet season. Seasonal wetlands support similar wildlife species as vernal swales, but also support species that require longer periods of ponding. Outside of the wet season, wildlife use is likely comparable to that typical of open grassland habitat.

Wet Meadow (0.615 acres). Gallaway biologists mapped three wet meadows in the eastern part of the project site. Common vegetation identified in the wet meadows onsite include common toad rush (*Juncus bufonius*), perennial rye grass, buttercup (*Ranunculus muricatus*), and seaside barley. These meadows may be saturated during the wet season and only contain standing water in response to heavy rain events. If sufficient prey resources are present, these meadows could provide open foraging habitat for bats and birds, including hawks and owls.

Seasonal Swale (1.212 acres). Gallaway biologists mapped 21 seasonal swales on the project site. Vegetation identified in seasonal swales onsite include similar species found in the seasonal wetlands onsite (discussed above), as well as prickly lettuce (*Lactuca serriola*) and big heron bill (*Erodium botrys*). Seasonal swales support similar wildlife species as vernal swales and wet meadows, with the exception of species that prefer prolonged periods of saturation (associated with vernal pools and swales).

Other Waters

Ephemeral and Intermittent Drainages (11.183 acres; 487,543.8 linear feet). Gallaway biologists mapped 19 features on the project site that qualify as other waters. Of the 19 features mapped, 15 contain ephemeral hydrology and four contain intermittent hydrology. The ephemeral drainages only flow in response to heavy rain events, and the intermittent drainages are typically dry by early summer. When inundated, a majority of these drainages flow to the southwest through the project site, including the four intermittent drainages. Comanche Creek is the only named intermittent drainage that flows through the project site; this feature eventually flows into the Sacramento River via Angel Slough. Ephemeral and intermittent drainages on the project site could seasonally support several wildlife species, although many aquatic species may be absent due to insufficient water. A more detailed discussion of drainages mapped on the project site is included in Appendix C.



SOURCE: ESRI 2019, Gallaway 2017

DUDEK

0 375 750 Feet

FIGURE 4.3-2A

Aquatic Resources

Valley's Edge Specific Plan Project

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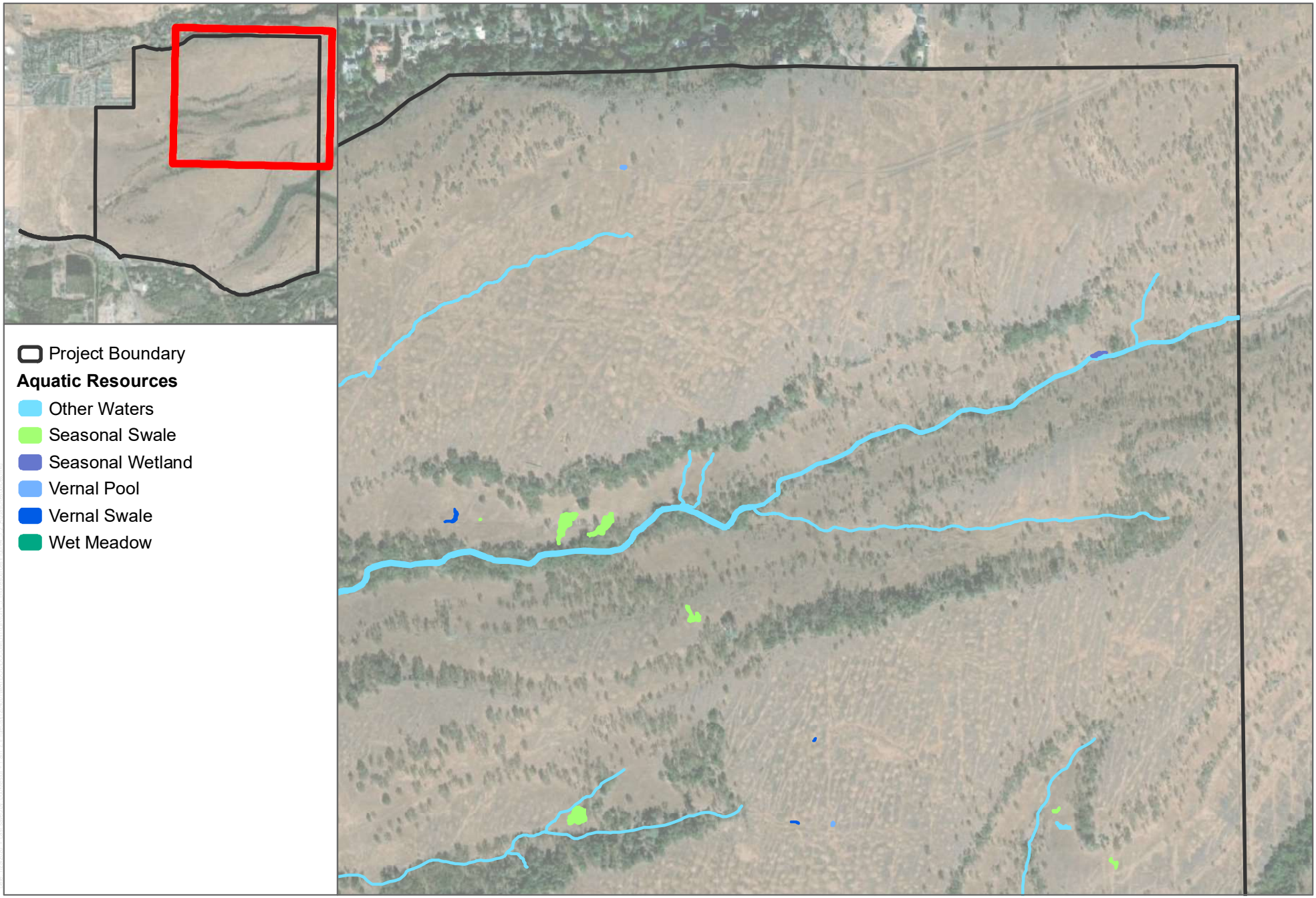

SOURCE: ESRI 2019, Gallaway 2017

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FIGURE 4.3-2B

Aquatic Resources

Valley's Edge Specific Plan Project

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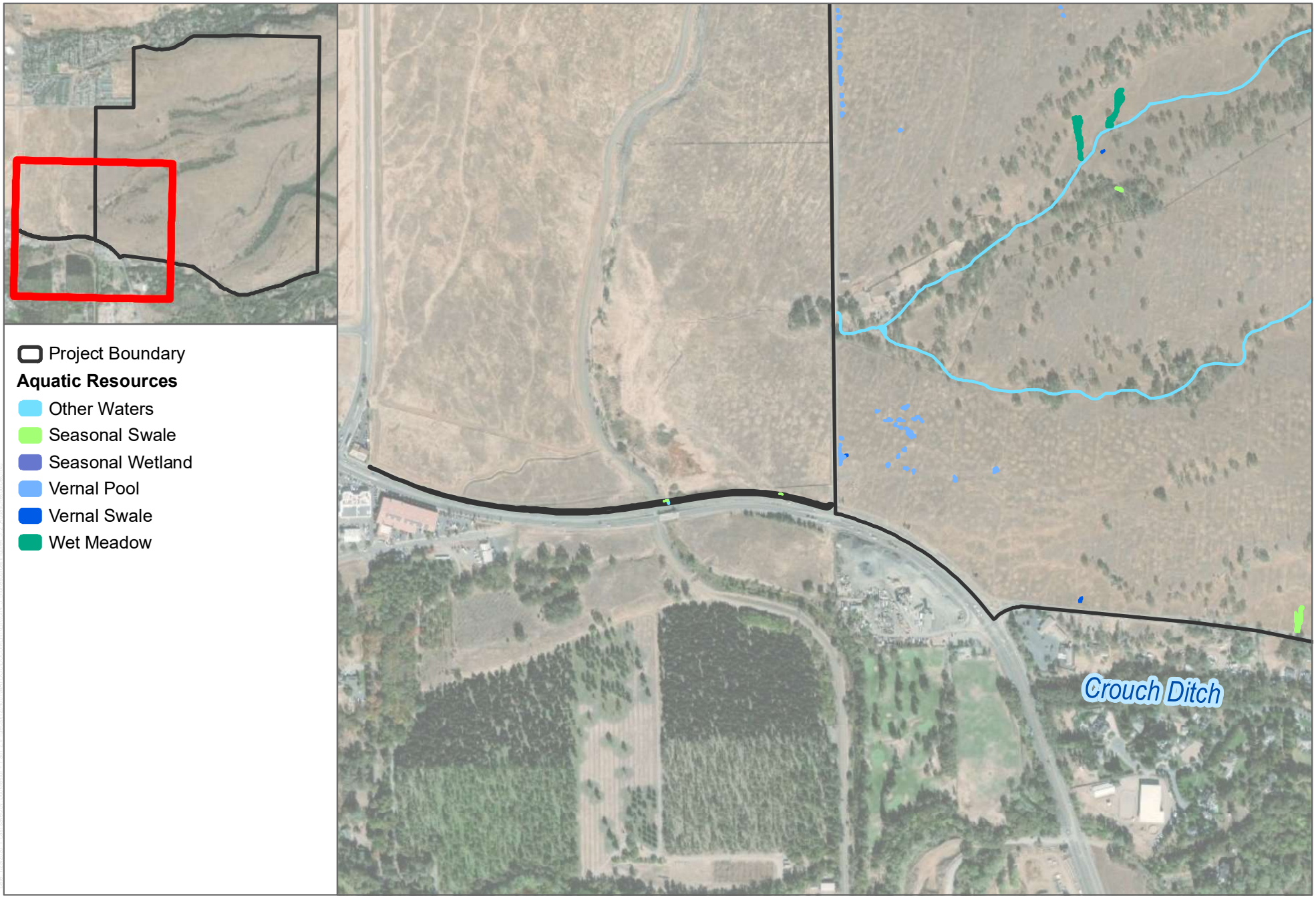

SOURCE: ESRI 2019, Gallaway 2017

DUDEK

0 375 750 Feet

FIGURE 4.3-2C

Aquatic Resources

Valley's Edge Specific Plan Project

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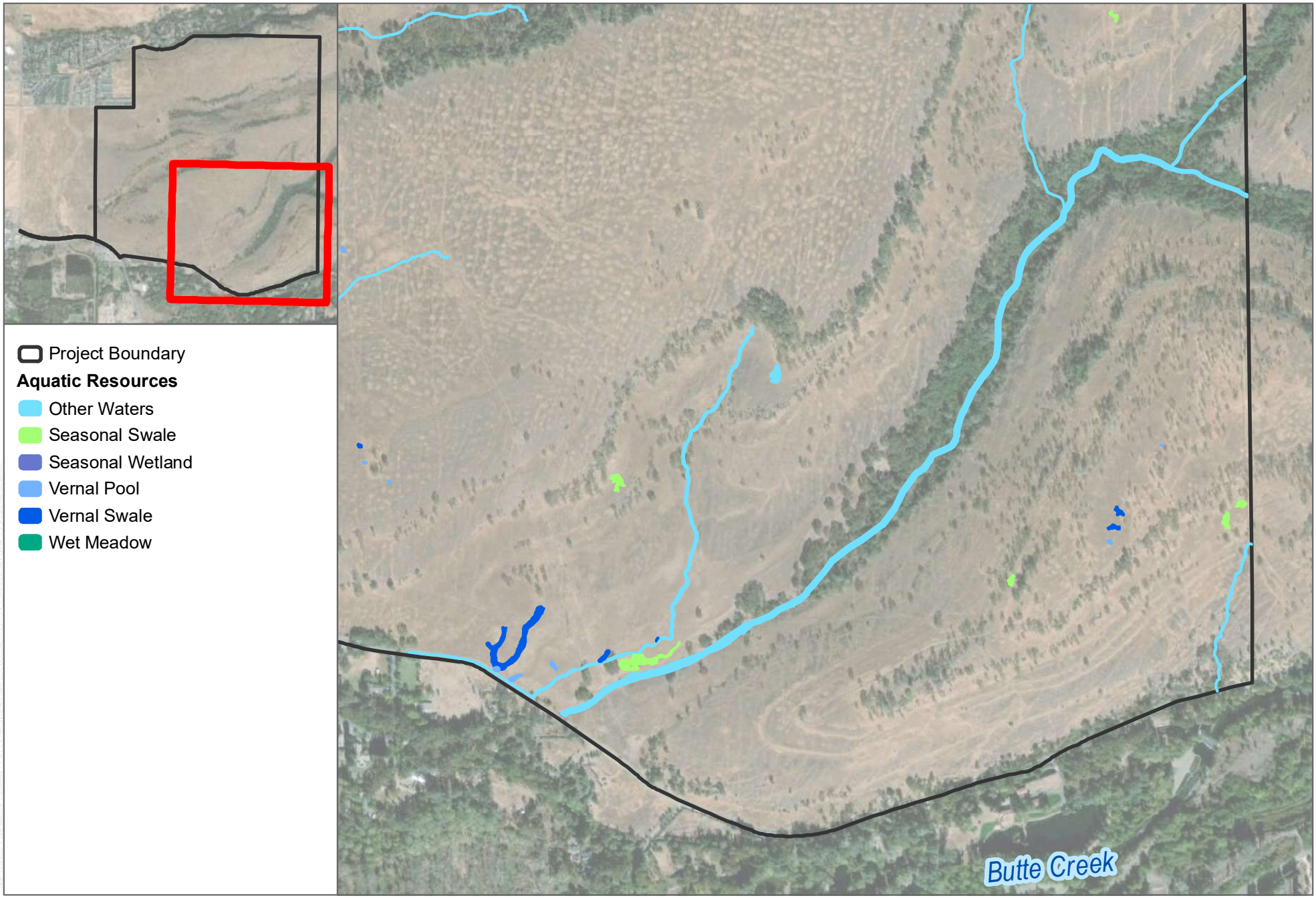

SOURCE: ESRI 2019, Gallaway 2017

DUDEK

0 375 750 Feet

FIGURE 4.3-2D

Aquatic Resources

Valley's Edge Specific Plan Project

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Common Plant and Wildlife Species

Gallaway Enterprises recorded 190 vascular plant species, 38 bird species, 2 reptile species, 1 amphibian species, and 3 mammal species during biological surveys of the project site that occurred over many years (see Gallaway 2018 in Appendix C). Common bird species recorded onsite include California scrub jay (*Aphelocoma californica*), red-shouldered hawk (*Buteo lineatus*), killdeer (*Charadrius vociferus*), and acorn woodpecker (*Melanerpes formicivorus*).

Other common wildlife species have been documented, via citizen science records, on or in the vicinity of the project site; these species include the greater roadrunner (*Geococcyx californianus*), western meadowlark (Sturnella neglecta), coyote (*Canis latrans*), and Mexican free-tailed bat (*Tadarida brasiliensis*) (eBird 2020; iNaturalist 2020). With the exception of native and migratory nesting birds and native bats, the common plant and wildlife species observed on the project site, or in the vicinity, are not protected or special-status species, as defined below.

Special-Status Plant and Wildlife Species

For the purposes of this analysis, special-status plant species are those plants listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) (16 USC 1531 et seq.); those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.); and plants that have a California Rare Plant Rank (CRPR) of 1 or 2 in the CNPS online Inventory of Rare and Endangered Plants (CNPS 2020).

Special-status wildlife species are those that are designated as either rare, threatened, or endangered (or candidates for designation) by CDFW or the USFWS; are protected under either the CESA or the ESA; meet the California Environmental Quality Act (CEQA) definition for endangered, rare, or threatened (14 CCR 15380[b],[d]); are considered fully protected under the California Fish and Game Code, Sections 3511, 4700, 5050, and 5515; or that are on the CDFW Special Animals List (CDFW 2019b) and determined by CDFW to be a Species of Special Concern.

Various agency databases were queried and reviewed to identify special-status species known to occur in the project site or vicinity. Figures 4.3-3A and 4.3-3B depict the recorded locations of special-status species based on information compiled in the database search (see Section 4.3.3 for a list of databases queried). For those species identified through this search, the potential for each species to occur on the proposed project site was determined based on a review of vegetation communities and land cover types, habitat features, soils, and elevation preferences, as well as the known geographic range of each species. The potential for occurrence of each species was summarized according to the categories listed below. Because not all species are accommodated precisely by a given category (i.e., category definitions may be too restrictive), an expanded rationale for each category assignment is provided.

- Known — the species is observed on the site or has recently been documented on the project site by a reliable observer.
- High — the species is known to occur in the vicinity and suitable high-quality habitat is present on site, but the species has not been observed during surveys.
- Moderate — the species has been documented in the vicinity and suitable habitat for the species is present, though not of high quality.
- Low — the species has not been documented in the vicinity and habitat for the species is of low to marginal quality.
- None — the species is not known to occur, and has no potential to occur in the project site based on sufficient surveys, the lack of suitable habitat, and/or the project site is well outside of the known distribution of the species.

Special-Status Plants

Results of the USFWS Information, Planning, and Conservation (IPaC) Trust Resource Report, California Natural Diversity Database (CNDDB), and CNPS searches revealed 34 special-status plant species as occurring in the project site or having the potential to occur in the project vicinity (see Table 4.3-7 in Appendix C). Of these, 33 species were removed from consideration due to a number of factors including a lack of suitable habitat within or immediately adjacent to the project site, outside of the species' known range, or because the species was not identified onsite during multiple protocol-level surveys; these species are therefore not addressed further in this EIR. There is one special-status plant species known to occur onsite: Butte County meadowfoam, which is discussed below.

Butte County Meadowfoam (Limnanthes floccosa ssp. californica). Butte County meadowfoam is a federal and state endangered and CRPR 1B.1 species that was identified on the project site during protocol-level rare plant surveys conducted in 2008, 2010, and 2016 (Appendix C). Figure 4.3-4 depicts the occurrences of Butte County meadowfoam mapped on the project site during the rare plant surveys. Butte County meadowfoam is an annual herb found in mesic valley and foothill grassland and vernal pools from approximately 150 to 3,050 feet AMSL (CNPS 2020). The Jepson Flora Project (2020) describes habitat as, "Vernal pool edges." It blooms March through May (CNPS 2020). Wetlands on the project site, such as vernal pools and swales, provide habitat for Butte County meadowfoam.

Special-Status Wildlife

Results of the CNDDB, USFWS IPaC Trust Resource Report, and relevant literature searches indicated 30 special-status wildlife species as potentially occurring in the project site or in the project vicinity (see Table 4.3-8 in Appendix C). Of these, 16 species are not expected to occur on the project site or vicinity based on lack of habitat on the project site and/or the project site being outside of the species' known range. The 14 remaining special-status wildlife species have a potential to occur on the project site. These species are presented in Table 4.3-4 and discussed in detail below.

Table 4.3-4. Special-Status Wildlife Species Occurrence Potential On and Off the Project Site

Scientific Name	Common Name	Status [1] (Fed/State)	Potential to Occur	
			On-Site	*Off-Site Utility*
Invertebrates				
Branchinecta conservatio	Conservancy fairy shrimp	FE/None	Low	Low
Branchinecta lynchi	vernal pool fairy shrimp	FT/None	Low	Low
Lepidurus packardi	vernal pool tadpole shrimp	FF/None	Low	Low
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/None	None	Moderate
Amphibians and Reptiles				
Spea hammondii	western spadefoot	None/SSC	Moderate	None
Actinemys marmorata	Western pond turtle	None/SSC	None	Moderate
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, SE	Low	Low

Table 4.3-4. Special-Status Wildlife Species Occurrence Potential On and Off the Project Site

Scientific Name	Common Name	Status [1] (Fed/State)	Potential to Occur	
			On-Site	*Off-Site Utility*
Athene cunicularia	burrowing owl	BCC/SSC	High	Low
Buteo swainsoni	Swainson's hawk	BCC/ST	Low	Low
Falco peregrinus anatum	American peregrine falcon	FDL, BCC/FP, SDL	Low	Low
Lanius ludovicianus	loggerhead shrike	BCC/SSC	Moderate	Low
Setophaga petechia	yellow warbler	BCC/SSC	Moderate	Low
Native and migratory birds protected by California Fish and Game Code and the MBTA			Known	Known
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Moderate	Moderate
Bassariscus astutus	ringtail	None/FP	Moderate	Low
Lasiurus blossevillii	western red bat	None/SSC	Low	Low
Taxidea taxus	American badger	None/SSC	Low	Low

Source: Appendix C.
Status Legend: FE: Federally listed as endangered; FT: Federally listed as threatened; FDL: Federal delisted; SE: State listed as endangered; ST: State listed as threatened; SSC: State Species of Special Concern; SDL: State delisted; FP: Fully protected by state; BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern.

Vernal Pool Branchiopods. Although potential habitat is present, the three federally listed branchiopods noted in Table 4.3-4 have a low potential to occur on the project site. Most vernal pools on the project site exhibit flashy, or short ponding durations and therefore provide poor to marginal habitat for these species. In addition, no listed, nor common, branchiopod species were identified during protocol-level wet and dry season surveys of 31 vernal pools in 2014, 2015, and/or 2016. Following 2016, nine additional vernal pools that provide marginally suitable habitat for listed branchiopods were added to the project site, which were surveyed only during the dry season in 2019; these surveys also yielded negative results for branchiopods. There are no records of listed branchiopod species on or adjacent to the project site. There is a documented occurrence for vernal pool tadpole shrimp detected in three vernal pools in 1993, approximately 0.7 mile west of the project site. However, no tadpole shrimp were detected at this same location during dry season surveys conducted in 2006. The next nearest occurrences for listed branchiopods are located in the Mud Creek watershed, approximately 2.5 to 3.5 miles north-northwest of the project site (CDFW 2020b).

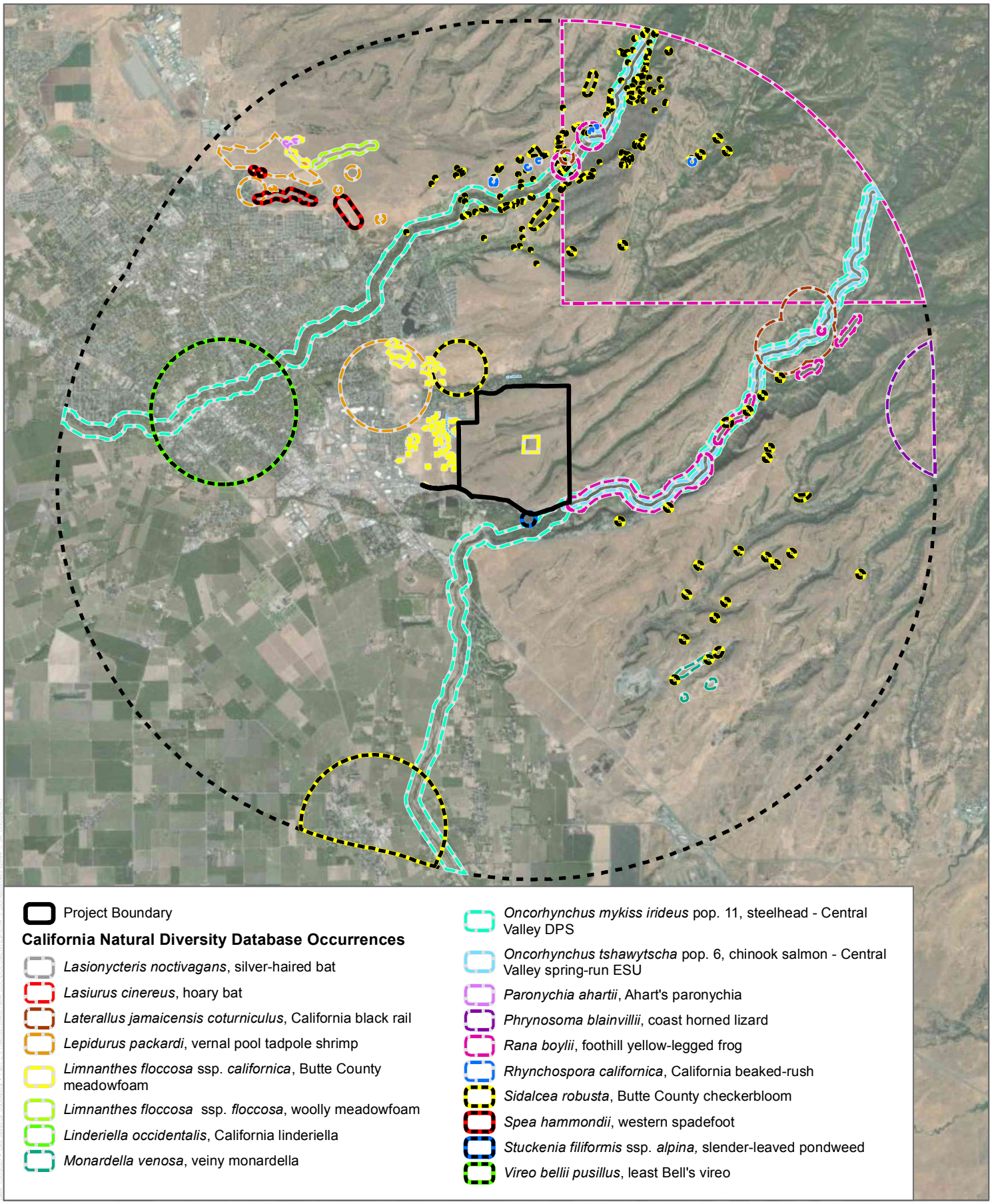
Western Spadefoot (Spea hammondii). Western spadefoot is a CDFW Species of Special Concern with a moderate potential to occur on the project site. This species primarily occurs in grassland and vernal pools in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agricultural land (CDFW 2020a). They utilize a range of permanent and temporary wetland habitats for breeding including creeks, rivers, pools in intermittent streams, vernal pools, and temporary rain pools. Vernal pools and other temporary wetlands are considered optimal for breeding due to the absence or reduced abundance of both native and nonnative predators, many of which require more permanent water sources (USFWS 2005). Western spadefoot are almost completely terrestrial, remaining underground in burrows for a majority of the year and entering water only to breed. While adults typically emerge from burrows from January through March, they may also emerge anytime between October and April if rain thresholds are met. The species is almost completely nocturnal with most above-ground activity occurring on rainy nights (Thomson et al. 2016).

Western spadefoot has not been documented on the project site; however, there are six documented occurrences of western spadefoot in the 12-quad area surrounding the project site. The nearest documented occurrence is for eggs, larvae, and adults detected in temporary breeding pools in 2014, 2015, and/or 2016, approximately 2.8 miles northeast of the project site (Occurrence No. 442; CDFW 2020b). Habitat for western spadefoot is limited to the northwestern portion of the project site where there are deeper soils and aquatic habitat.

Tricolored Blackbird (Agelaius tricolor). Tricolored blackbird is a state threatened species with a low potential to occur on the project site. This species primarily nests near freshwater emergent wetlands with cattails (*Typha* spp.) or tules (*Schoenoplectus* spp.), but may also nest in Himalayan blackberry (*Rubus armeniacus*), thistle (*Silybum marianum* or *Cirsium* vulgare), and triticale (i.e., wheat-rye hybrid grain) fields. Other less common nesting substrate includes mustard (*Brassica* sp.), willows (*Salix* sp.), mallow (*Malva* sp.), wild rose (*Rosa* sp.), tamarisk (*Tamarix* sp.), and giant cane (*Arundo* sp.). Tricolored blackbird forage in grasslands, woodland, and agricultural land, which may be located up to four miles from their nesting sites (CDFW 2020a; CDFW 2018).

Tricolored blackbird has not been documented on the project site. There are 11 documented occurrences of tricolored blackbird in the 12-quad area surrounding the project site; however, 10 of the 11 records are restricted to the valley floor. The nearest documented occurrence is for an estimated 150 breeding pairs observed occupying a dense bed of thistle at the Humboldt Road Burn Dump site adjacent to rolling, rocky foothill grasslands in May 1983, approximately 0.75 mile northwest of the project site (Occurrence No. 261; CDFW 2020b). No additional observations of tricolored blackbird have been documented at that location since the first sighting in 1983. There is one citizen science record from 2013 for roughly 100 tricolored blackbirds observed in thistle near Skyway Road, approximately 0.38 mile south of the project site (eBird 2020). Nesting habitat for tricolored blackbird on the project site is marginal to nonexistent due to a lack of standing water and thorny vegetation. Open grassland throughout the project site provides potential foraging habitat for this species, but there are no reliable records of nearby colonies to suggest that this grassland area supports breeding colonies of tricolored blackbird.

Burrowing Owl (Athene cunicularia). Burrowing owl is a CDFW Species of Special Concern with a high potential to occur on the project site. Two active burrows and three adult burrowing owls were observed along Doe Mill Road on the project site in February 2006. Two of the adult owls were occupying a burrow located at the base of a lava rock wall and the third adult owl was occupying a burrow in a pile of rocks. The record does not specify if the owls were using the area for breeding or overwintering; however, both burrows at this location were destroyed by heavy equipment in April 2006 (Occurrence No. 1029; CDFW 2020b). During nesting and wintering, burrowing owl utilizes abandoned ground squirrel burrows and other mammal burrows in open habitats with level to gentle topography, and well-drained soils, such as grasslands, agricultural land, and vacant lots or pastures. Nesting has also been observed in rock cavities, debris piles, culverts, and pipes throughout the species range. Nesting and wintering sites are normally located where there are unobstructed views of possible predators, such as dogs, raptors, and ravens/crows (CDFW 2020a; CDFW 2012). No suitably-sized burrows were documented on the project site during the biological field surveys. Open grassland on the project site provides potential foraging habitat for burrowing owl.



SOURCE: CNDDB 2020

DUDEK

0 4,650 9,300 Feet

FIGURE 4.3-3A

California Natural Diversity Database Occurrences

Valley's Edge Specific Plan Project

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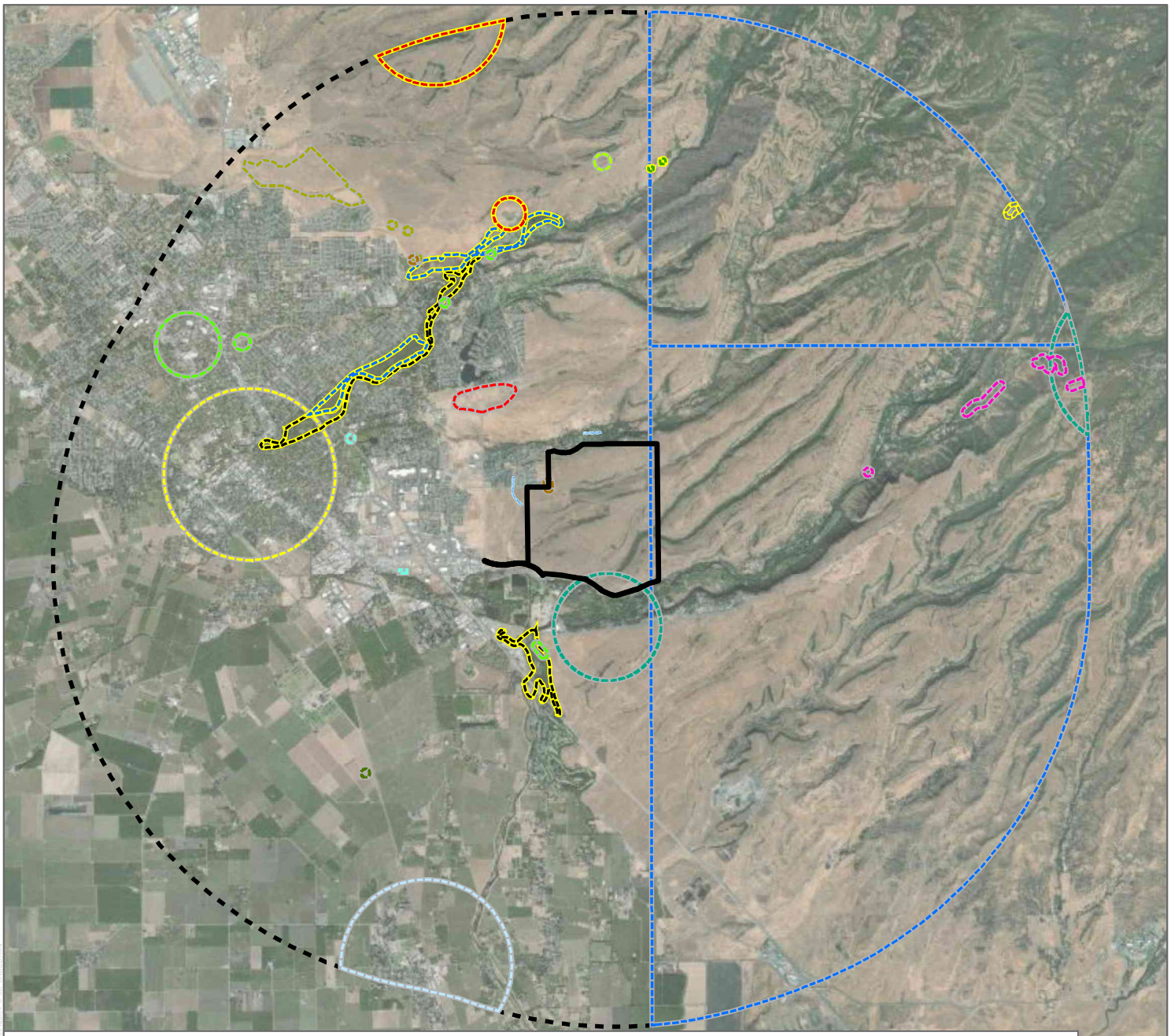

SOURCE: ESRI 2019, CNDDB 2020

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0 4,650 9,300 Feet

FIGURE 4.3-3B

CNDDB Occurrences

Valley's Edge Specific Plan Project

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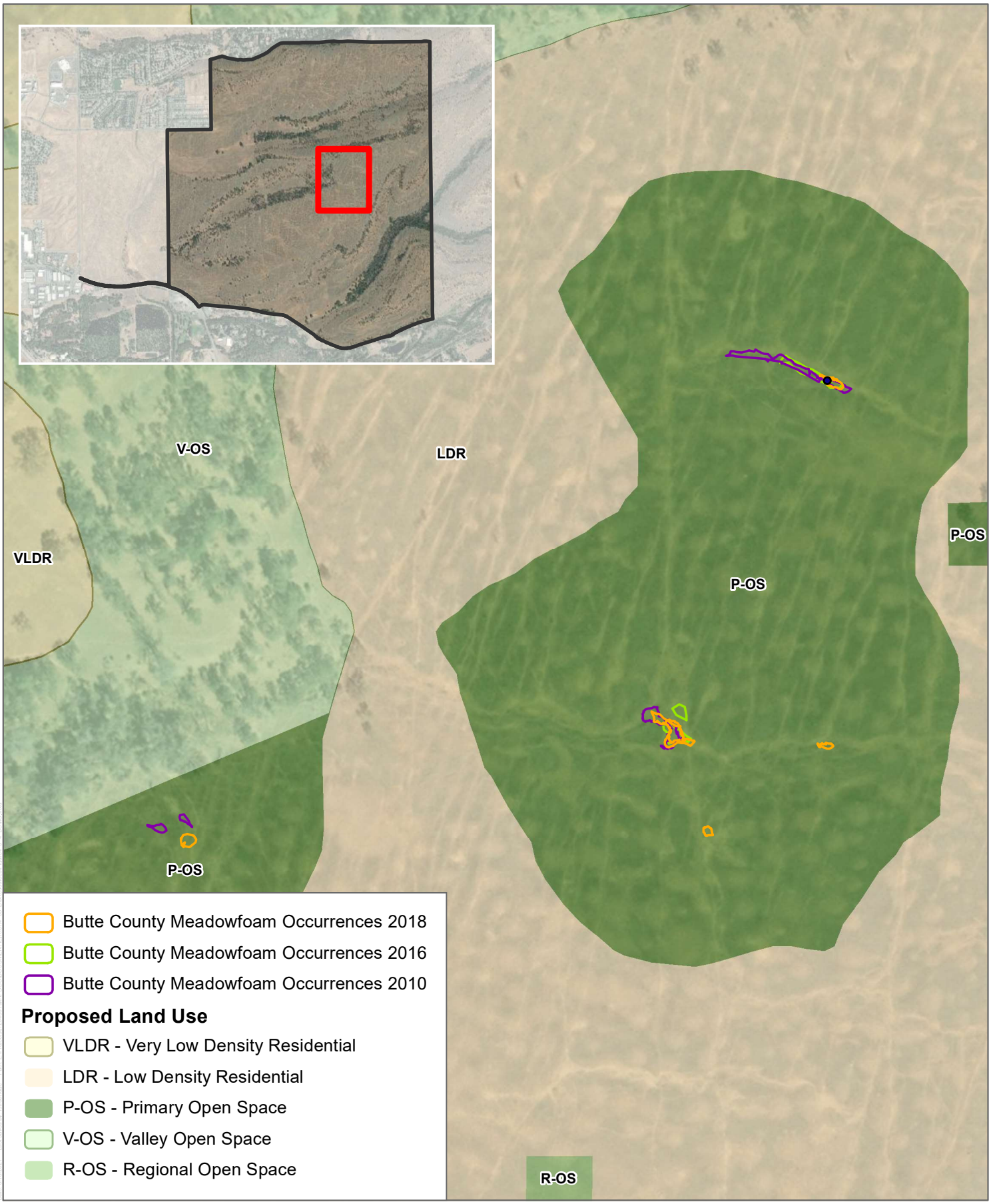

SOURCE: ESRI 2019, Gallaway 2018

DUDEK

0 100 200 Feet

FIGURE 4.3-4

Butte County Meadowfoam Occurrences

Valley's Edge Specific Plan Project

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Swainson's Hawk (Buteo swainsoni). Swainson's hawk is a state threatened species with a low potential to occur on the project site. This species spends the breeding season in the Central Valley and is commonly found in agricultural areas or open grasslands containing solitary trees for nesting. Swainson's hawk may also nest in open woodland and riparian habitat. They forage on small mammals and reptiles in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture (CDFW 2020a).

Swainson's hawk has not been documented on the project site; however, no focused surveys for this species have been conducted. There are 16 documented occurrences of Swainson's hawk in the 12-quad area surrounding the project site; however, all of these records are restricted to the valley floor where agricultural lands provide abundant foraging opportunities. In addition, there are no recent documented occurrences of nesting within 10 miles of the project site (CDFW 2020b). As such, there is only a low potential for Swainson's Hawk presence on the project site.

American Peregrine Falcon (Falco peregrinus anatum). American peregrine falcon is a CDFW Species of Special Concern and Fully Protected Species with a low potential to occur on the project site. This species typically nests on cliffs, mounds, dunes, or banks near coasts, bays, marshes, and other bodies of water. Their nest is normally a scrape in a depression or ledge, but they may also nest on buildings, bridges, and in tree snags. They winter in the Central Valley and forage in wetlands, riparian, meadows, croplands, especially where waterfowl are present (CDFW 2020a).

American peregrine falcon was not observed within the project site during site surveys. There are only two documented occurrences of American peregrine falcon in the 12-quad area surrounding the project site. The nearest documented occurrence is for a pair nesting on a cliff in 2007; the location of the record is suppressed and mapped as the entire Hamlin Canyon, CA topographic quad, which intersects the eastern extent of the project site (Occurrence No. 30; CDFW 2020b). Foraging habitat for American peregrine falcon on the project site is of poor quality due to a lack of cliffs, ledges, and perennial water bodies. Tree snags on the project site provide potential nesting habitat for the falcon.

Loggerhead Shrike (Lanius ludovicianus). Loggerhead shrike is a CDFW Species of Special Concern with a moderate potential to occur on the project site. This species nests and forages in open habitats with scattered shrubs, trees, and other perches, as well as bare ground, and low or sparse herbaceous cover. They rarely occur in heavily urbanized areas and are often found in open cropland. Loggerhead shrike normally build their nest on a stable branch of a tree or shrub, well-concealed by dense foliage (CDFW 2020a).

Loggerhead shrike was not observed within the project site during site surveys. There is only one documented occurrence of loggerhead shrike in the 12-quad area surrounding the project site. This occurrence is for a pair nesting in riparian habitat along Gold Run Creek in May 2002, approximately 9.4 miles southeast of the project site (Occurrence No. 19; CDFW 2020b). However, there are two citizen science records from January 2019 noting a sighting along Dawncrest Drive and 20th E. Street, adjacent to the northwest project boundary (eBird 2020). Trees and shrubs on the project site provide potential nesting habitat for loggerhead shrike.

Yellow Warbler (Setophaga petechia). Yellow warbler is a CDFW Species of Special Concern with a moderate potential to occur on the project site. This species nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine (*Pinus ponderosa*) forest, and mixed-conifer habitats; although they are more closely associated with riparian habitat, particularly willow and alder (*Alnus* spp.) thickets, in montane areas and willow-cottonwood riparian habitats at lower elevations. Yellow warbler normally nest in a deciduous sapling or shrub in dense understory. They are vulnerable to brood parasitism by brown-headed cowbirds (*Molothrus ater*), which may be a substantial factor in the recent decline of lowland populations (CDFW 2020a).

Yellow warbler was not observed within the project site during site surveys. There is only one documented occurrence of yellow warbler in the 12-quad area surrounding the project site. This occurrence is for a pair (nesting status not confirmed) observed along Gold Run Creek in May 2002, approximately 9.5 miles southeast of the project site (Occurrence No. 92; CDFW 2020b). However, there are numerous citizen science records of yellow warbler recorded between 1964 and 2020 within 1 mile of the project site (eBird 2020). A majority of the citizen science records are post-2014 and located in dense riparian corridors along Little Chico Creek north of the project site, and along Butte Creek in the foothills southeast of the site and where Butte Creek flows through Mendocino National Forest Genetic Resource and Conservation Center south of the project site (eBird 2020). The riparian woodland on the project site provides potential nesting and foraging habitat for yellow warbler but is considered poor quality habitat due to the presence of cowbirds and minimal understory vegetation for nesting.

Pallid Bat (Antrozous pallidus). Pallid bat is a CDFW Species of Special Concern with a low potential to occur on the project site. This species occupies a variety of habitats including grassland, shrubland, woodland, and forests from sea level up through mixed conifer forest. They utilize crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live or dead trees for day roosting. Maternity roosts are usually located in rock crevices or buildings, and hibernation may occur in caves and mines (NatureServe 2020). They are very sensitive to disturbance of their roosting sites. Pallid bat prefer foraging in open areas, such as grasslands, adjacent to suitable roosting sites (CDFW 2020a).

Pallid bat has not been documented on the project site; however, no focused surveys for bats have been conducted within the project site. There is only one documented occurrence of pallid bat in the 12-quad area surrounding the project site. This occurrence is based on two 1992 collections in the vicinity of Chico (exact location not known), approximately 2.3 miles west of the project site (Occurrence No. 132; CDFW 2020b). Trees on the project site provide potential roosting habitat for pallid bat, and open grassland provides potential foraging habitat for this species.

Ringtail (Bassariscus astutus). Ringtail is a CDFW Fully Protected species with a moderate potential to occur on the project site. This species normally occurs in riparian, forest, woodland, and shrub-type habitats from 0 to 4,595 feet above mean sea level (less common up to 9,515 feet above mean sea level) (ADW 2020). Ringtail is a nocturnal species frequently found in areas of human habitation, but rarely found more than 0.6 mile from permanent water (IUCN 2020; CDFW 2020a). They establish dens in tree hollows, rock recesses, boulder piles, logs, snags, and abandoned burrows and normally forage near water where food resources are more abundant (CDFW 2020; ADW 2020).

CDFW does not track occurrences for ringtail, so the nearest documented occurrence to the project site was determined through a review of citizen science records. The nearest citizen science record is for an adult ringtail identified in February and March 2019, in the vicinity of Butte Creek Ecological Preserve, approximately 1.4 miles southeast of the project site (iNaturalist 2020). The record is considered reliable as it was submitted by researchers associated with the Chico State Field Ecology program and species identification was based on multiple photographs produced by a motion-activated wildlife camera.

Ringtail could use the riparian woodland to move through the proposed project site at night or dusk and could potentially den within the riparian habitat or other areas where there are rock crevices, hollow trees, or fallen logs. However, the likelihood of denning is reduced because the project site does not have extensive riparian habitat (less than 1% of project site) and lacks permanent, year-round water. In addition, woodlands on the project site are surrounded by expansive open areas with minimal protective cover from predators.

Western Red Bat (Lasiurus blossevillii). Western red bat is a CDFW Species of Special Concern with a moderate potential to occur on the project site. This species primarily roosts in trees and occasionally shrubs or on the ground in forests, woodlands, and orchards. They prefer roosts where leaves form a dense canopy above and branches do not obstruct the bats' flyway below. Western red bat usually roost solitarily, but gather in colonies for breeding. This species forages in small clearings, around street and flood lights, and along forest edges. Roosting is common in edge habitats near streams, open fields, orchards, and sometimes urban areas during the day (BCI 2020; CDFW 2020a).

Western red bat has not been documented on the project site; however, no focused surveys for bats have been conducted within the project site. There are only two documented occurrences of western red bat in the 12-quad area surrounding the project site. Both occurrences, for multiple bats detected in 1999, are restricted to the Sacramento River, approximately 9 miles west of the project site (Occurrence No. 56 and 57; CDFW 2020b). Trees on the project site provide potential roosting habitat for western red bat, and woodland clearings and edges provide potential foraging habitat for this species.

American Badger (Taxidea taxus). American badger is a CDFW Species of Special Concern with a low potential to occur on the project site. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats with loose soils for burrowing and hunting prey. Prey species are primarily ground squirrels (*Otospermophilus beecheyi*) and pocket gophers (*Thomomys* spp.), but also include insects, birds, and carrion. American badgers are elusive, nocturnal mammals with expansive home ranges (CDFW 2020a).

There is only one documented occurrence of American badger in the 12-quad area surrounding the project site. This occurrence is based on a 1986 collection along Butte Creek, approximately 14.5 miles southwest of the project site (CDFW 2020b). The project site provides poor quality habitat for American badger due to the scarcity of their preferred prey onsite, as well as a general lack of loose soils for burrowing.

Other Nesting and Migratory Birds. The project site provides nesting habitat for a number of local and migratory bird species within trees, shrubs, open grassland, rock piles, and human-made structures. Native birds of prey are protected by California Fish and Game Code Section 3503.5 and migratory bird species are protected by the federal Migratory Bird Treaty Act (MBTA). Many common migratory birds and raptors were detected on the project site during the biological field surveys (Appendix C).

Western Pond Turtle (Actinemys marmorata). Western pond turtles are a SSC with a low potential to be present on the project site. No western pond turtles were observed during the habitat assessment. This species inhabits bodies of water such as creeks, ponds, and marshes. The aquatic resources present on the project site do not provide suitable ponded habitat for this species. There is one CNDDB occurrence of western pond turtle within close proximity of Comanche Creek, located approximately 0.9 mile southwest of the project site. It is located north of Comanche Creek on the other side of Fair Street, within the Fair Street Ponds, which is hydrologically connected to Comanche Creek (Gallaway 2020).

Valley Elderberry Longhorn Beetle (VELB, Desmocerus californicus dimorphus). VELB is listed as threatened under the federal ESA. The VELB is a medium-sized (0.8-inch long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry (Sambucus spp.). No elderberry shrubs were identified within the project site.

Sensitive Natural Communities

There are no vegetation communities on the project site considered sensitive by CDFW (2019a). Valley oak riparian woodland associated with the two intermittent drainages onsite is protected under Section 1602 of California Fish and Game Code. Any impacts to this community to accommodate stream crossings would potentially require authorization from CDFW in the form of a lake or streambed alteration agreement.

Potentially Jurisdictional Waters

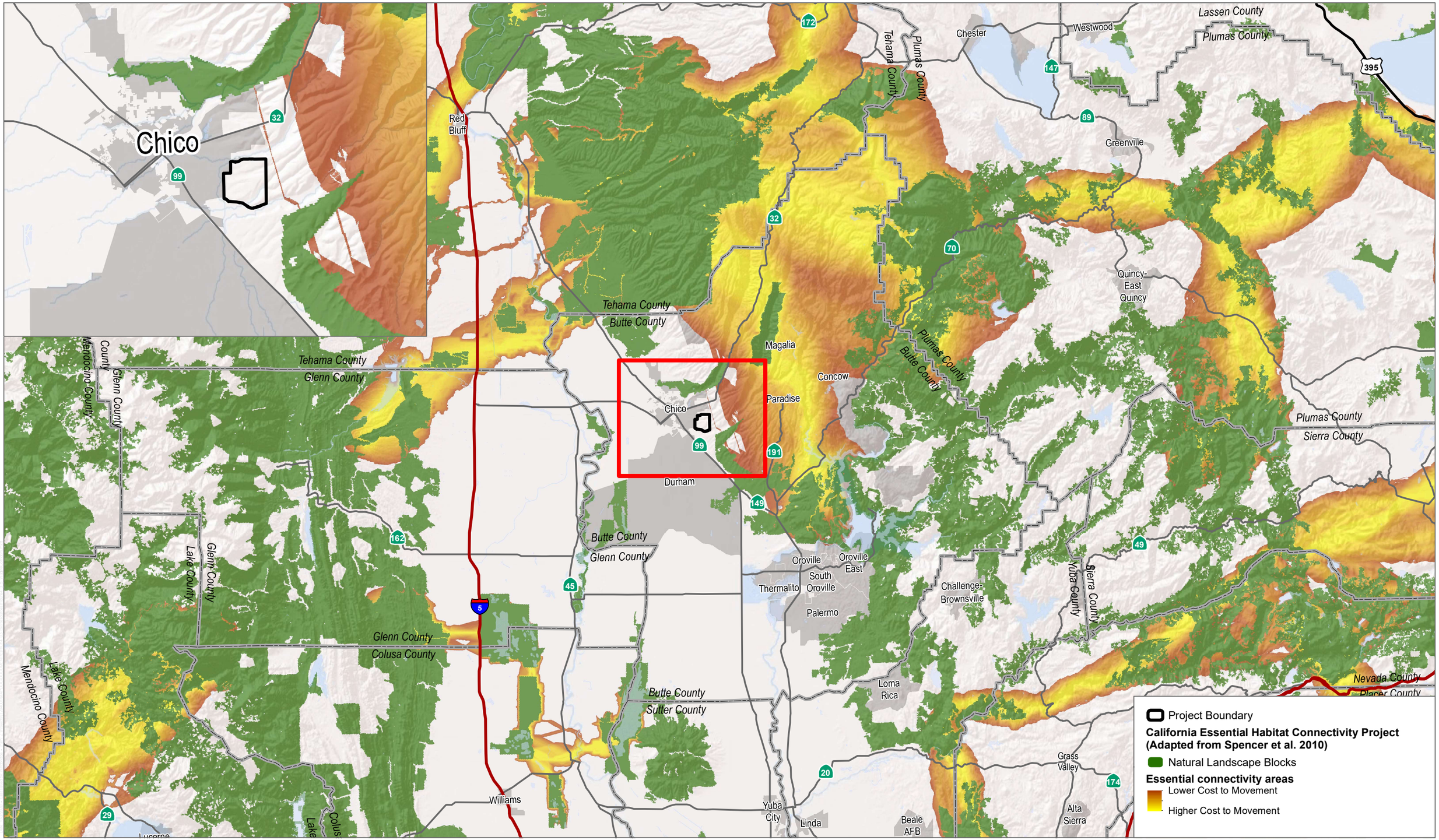
There are 17.43 acres of aquatic resources mapped on the project site (see Table 4.3-3, Figure 4.3-2 and Gallaway 2017 in Appendix C). Impacts to these resources may require permit authorization from the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and/or CDFW.

Wildlife Corridors and Habitat Linkages

Wildlife corridors are landscape features, usually linear in shape, that facilitate the movement of animals (or plants) over time between two or more patches of otherwise disconnected habitat. Corridors can be small and even human made (e.g., highway underpasses, culverts, bridges), narrow linear habitat areas (e.g., riparian strips, hedgerows), or wider landscape-level extensions of habitat that ultimately connect even larger core habitat areas. Depending on the size and extent, wildlife corridors can be used during animal migration, foraging events, and juvenile dispersal, and ultimately serve to facilitate genetic exchange between core populations, provide avenues for plant seed dispersal, enable increased biodiversity and maintenance of ecosystem integrity within habitat patches, and help offset the negative impacts of habitat fragmentation. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as 'stepping stones' for wildlife dispersal (Hilty et al. 2006).

The California Essential Habitat Connectivity Project, developed by CDFW and the California Department of Transportation, intends to describe and depict a functional network of connected wildlands that is essential to the continued support of California's diverse natural communities in the face of human development and climate change (Caltrans et al. 2010). The Essential Habitat Connectivity Project identifies large, relatively natural habitat blocks within the state that support native biodiversity and depicts the relative permeability of areas to provide some level of ecological connectivity between these habitat blocks. The Essential Connectivity Map indicates that the project site is not located within an area that provides connectivity between similar habitat patches, as shown on Figure 4.3-5, Wildlife Corridors and Habitat Linkages. The project site is generally surrounded by urban development to the north, west, and south, with the exception of expansive undeveloped land to the east. Drainages and wooded areas on the project site, including open woodland and riparian corridors, provide potential movement corridors for wildlife occupying the region.

The Butte Regional Conservation Plan (BRCP) indicates that the proposed project site is located within an area identified as the winter range for deer herds, as shown on Figure 10-3 in the BRCP, Butte County Deer Herd Migration Overlay Area. According to Butte County GIS data, approximately 155 acres in the northeast portion of the project site overlaps the winter migration area (Butte County 2020a). The winter range for deer herds in Butte County extends from the Central Valley to 3,000 feet AMSL; however, the winter range that is considered critical is located above 1,000 feet AMSL (Butte County 2019).



SOURCE: Hunsaker, 2014; USDA, 2012; CDFG, 2000

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FIGURE 4.3-5

Wildlife Corridors and Habitat Linkages

Valley's Edge Specific Plan Project

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Off-Site Infrastructure

As noted in Chapter 2, Project Description, the proposed project requires extending portions of the City's wastewater infrastructure. This includes adding new sewer lines that were identified in the City's Sanitary Sewer Master Plan Update, as shown on Figure 2-10 in Chapter 2. The total length is approximately 3.5 miles. Segment A includes approximately 3,900 linear feet of new sewer line within the paved portion of E. 20th Street that also crosses the Butte Creek Diversion Channel. Segment B includes an approximately 5,500 linear foot section of a new sewer line trenched in the right of way of Skyway, Morrow Lane, and Cramer Lane. This segment also crosses the Butte Creek Diversion Channel at Skyway. Segment B is mostly within paved sections of Skyway, Morrow Lane and Cramer Lane until it crosses Comanche Creek, and continues through oak woodland, a dirt roadway, and highly disturbed grassland. Segment C includes approximately 1,100 linear feet of new sewer line that would mostly be located within the alignment of a historic railroad grade that has since reverted back to oak woodland and highly disturbed annual grassland. Segment D includes approximately 7,700 linear feet of new sewer line that would be entirely located in the paved or disturbed portions of Entler Avenue and Midway.

Gallaway Enterprises (Appendix C) conducted a habitat assessment and a wetland delineation of these areas and concluded no sensitive natural communities were identified within the proposed off-site utilities area. The areas surveyed consist of urban, barren and valley foothill riparian habitat types. The habitat conditions are considered highly degraded due to existing development and the previous installation of utilities (e.g. underground water and gas lines). A review of potentially jurisdictional wetlands was conducted and none were observed within the off-site utilities area. However, two features totaling 0.27 acres were identified as Tributaries to a "navigable waters of the United States", per the Clean Water Act Final Rule, Federal Register Volume 85, No-77 (Final Rule). Tributaries are intermittent or perennial water bodies in a typical year, including lakes, stream channels, and other similar surface water features that exhibit an ordinary high-water mark, but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology). One of the Tributaries identified is Comanche Creek, which is an intermittent drainage feature within this reach, and the other Tributary identified is the Butte Creek Diversion Channel, which is an intermittent drainage. Perennial drainages typically flow year-round and intermittent drainages typically flow for more than 3 months of the year and have a documented hydrologic connection to a navigable water. Comanche Creek is a tributary of Angel Slough, which is a tributary of Butte Creek, which in turn is a tributary of the Sacramento River and the Butte Creek Diversion Channel flows converges with Butte Creek southeast of the project site. Construction of this infrastructure crossing Comanche Creek and the Diversion Channel would use a "bore and siphon" method. This method is commonly used for utility lines and can be done without discharging fill or impacting the streambed, and often may be done without needing permits from the resource agencies.

Within the off-site utilities area, the habitat assessment noted the potential for western pond turtle to be present in Comanche Creek, and several valley elderberry shrubs which provide habitat for the valley elderberry longhorn beetle (VELB), were recorded immediately adjacent to the utility corridor. The project would not require the removal of any valley elderberry shrubs for installation of the off-site utilities and would not directly impact VELB. The habitat assessment did not identify habitat for any special-status bird species; however, suitable habitat for nesting migratory bird species is present. No special-status plants were observed within the off-site utilities area during the botanical survey conducted on June 2, 2020 (Gallaway 2020).

The project also includes construction of a traffic roundabout to be located immediately adjacent to the project site within Skyway. The roundabout is proposed within the existing right-of-way of Skyway. A biological assessment of this component of the project has not been conducted, however the paved roadway and roadside drainage ditches are not likely to support any sensitive special-status species or habitat.

4.3.2 Regulatory Setting

Federal Regulations

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973, as amended, (16 USC 1531 et seq.) serves as the enacting legislation to list, conserve, and protect threatened and endangered species, and the ecosystems on which they depend, from extinction. In addition, for those wildlife species listed as federally endangered, FESA provides for the ability to designate critical habitat, defined as that habitat considered "essential to the conservation of the species" and that "may require special management considerations or protection." Under FESA Section 7, if a project that would potentially result in adverse impacts to threatened or endangered species includes any action that is authorized, funded, or carried out by a federal agency, that agency must consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any such action is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat for that species. FESA Section 9(a)(1)(B) prohibits the taking, possession, sale, or transport of any endangered fish or wildlife species. "Take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532 (19)). With respect to any endangered species of plant, Sections 9(a)(2)(A) and 9(a)(2)(B) prohibit the possession, sale, and import or export, of any such species, and prohibits any action that would "remove and reduce to possession any such species from areas under federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law." Pursuant to FESA Section 10(a)(1)(B), the USFWS may issue a permit for the take of threatened or endangered species provided that such taking is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."

The project site supports Butte County meadowfoam, an endangered species protected under the federal ESA. Proposed project implementation has a potential to directly impact this species. As a result, the provisions of the federal ESA would apply to the proposed project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the Code of Federal Regulations. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by the U.S. Fish and Wildlife Service. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the Code of Federal Regulations. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). In late December 2017, the Department of Interior issued an opinion that interprets the above prohibitions as only applying to direct and purposeful actions of which the intent is to kill, take, or harm migratory birds; their eggs; or their active nests. Incidental take of birds, eggs, or nests that are not the purpose of such an action, even if there are direct and foreseeable results, is not prohibited.

Native and migratory birds utilize vegetation communities or land cover types within the proposed project site for nesting. Intentional take of any of these birds or their nests and young, if present, is prohibited under the MBTA.

Clean Water Act – Section 404

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, the ACOE has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The ACOE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

On January 23, 2020, the ACOE and Environmental Protection Agency (EPA) finalized the "Navigable Waters Protection Rule," which establishes a new definition of "Waters of the U.S." under the CWA. The new Navigable Waters Protection Rule (Rule) repeals the Obama-era 2015 Clean Water Rule and replaces it with a definition that drastically limits the scope of federal regulation to a much narrower collection of aquatic resource features. Among the greatest changes, the Rule eliminates "significant nexus" determinations to determine if potential tributaries have a significant effect on the "chemical, physical, and biological integrity of downstream traditional navigable waters." The Rule also redefines the term "adjacent." In order for an adjacent wetland to be jurisdictional, it must touch "at least one point or side of a jurisdictional water" or have a direct hydrological surface connection to a traditional navigable waterway. Hydrological connections through groundwater, which have been suggested to maintain federal jurisdiction in the past, are now outside of the scope of federal purview. Most importantly, the Rule identifies four specific categories of aquatic resource features that will be regulated by the federal government under the CWA, leaving oversight for other "excluded" waterbodies to states and tribes. The four specific categories of aquatic resources regulated under the CWA are:

1. Territorial seas and traditional navigable waters
2. Perennial and intermittent tributaries
3. Certain lakes, ponds, and impoundments
4. Wetlands that are adjacent to jurisdictional waters

The revised Rule does not expand federal regulation to include new categories of aquatic features; however, it does provide a list of excluded features that would no longer be considered Waters of the U.S. under the final Rule. Most significantly, "ephemeral" streams and other features that only flow in direct response to precipitation, and are particularly prevalent in the western United States, would no longer be subject to CWA regulation. The revised Rule redefining Waters of the U.S. would go into effect within 60 days of its publication in the Federal Register, which occurred on April 21, 2020. Implementation of the revised rule may be delayed by legal challenge.

The project site supports approximately 17.43 acres of aquatic resources, some of which are anticipated to meet the criteria of Waters of the U.S. regulated under Section 404 of the CWA.

Clean Water Act – Section 401

The State Water Resources Control Board has authority over wetlands through Section 401 of the CWA, as well as the Porter–Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources

Control Board to the nine regional boards. The Central Valley RWQCB has authority for Section 401 compliance in the project area. A request for certification is submitted to the regional board at the same time that an application is filed with the ACOE.

The project site supports approximately 17.43 acres of aquatic resources, some of which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Act and/or Section 401 of the Clean Water Act.

State Regulations

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Fish and Game Commission has the responsibility of maintaining a list of threatened and endangered species. CESA prohibits the take of state-listed threatened or endangered animals and plants unless otherwise permitted pursuant to CESA. Take under CESA is defined as any of the following: "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (California Fish and Game Code Section 86). Unlike the federal Endangered Species Act, CESA does not include harassment or harm (e.g., habitat degradation) in its definition of take. Species determined by the State of California to be candidates for listing as threatened or endangered are treated as if listed as threatened or endangered and are, therefore, protected from take. Pursuant to CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species, or candidate species, could be potentially impacted by that project.

The project site supports Butte County meadowfoam, an endangered species protected under the CESA. Proposed project implementation has a potential to directly impact this species. As a result, the provisions of CESA would apply to the proposed project.

Fish and Game Code Section 1600 – Lake and Streambed Alteration Agreement

Under Sections 1600–1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (Section 1601). In practice, CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

The project site supports 11.183 acres of channels protected under Fish and Game Code Section 1600. If proposed project implementation would impact any of these channels, the provisions of Fish and Game Code Section 1602 would apply to the proposed project.

California Department of Fish and Wildlife – Wetlands Protection Regulations

The CDFW derives its authority to oversee activities that affect wetlands from state legislation. This authority includes California Fish and Game Code Sections 1600–1616 (lake and streambed alteration agreements), the California ESA (protection of state-listed species and their habitats, which could include wetlands), and the Keene–Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, CDFW asserts authority over wetlands within the state through any of the following: review and comment on

U.S. ACOE Section 404 permits, review and comment on CEQA documents, preservation of state-listed species, or lake and streambed alteration agreements.

The project site supports 17.430 acres of aquatic resources that may be regulated under the CDFW Wetlands Protection Regulations because they provide habitat for CESA-protected species and/or meet the criteria of a stream or lake as defined by Section 1601 of Fish and Game Code.

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act provides that "All discharges of waste into the waters of the State are privileges, not rights." Waters of the state are defined in Section 13050(e) of the Porter–Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter–Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The Central Valley RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. As noted in the discussion of the CWA, the Central Valley RWQCB is the appointed authority for Section 401 compliance in the project area.

On April 2, 2019, the SWRCB adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures). The Procedures provide information on wetlands and other waters of the state (outside of federal jurisdiction), as well as field delineation and permit application procedures. The Procedures will codify and standardize the evaluation of impacts and protection of waters of the state from dredge and fill activities. On February 14, 2020, the SWRCB published *Draft Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Draft Guidance). The Draft Guidance is intended to assist in the implementation of the Procedures and is expected to be finalized following the incorporation of comments made during public circulation of the document.

The project site supports 17.43 acres of aquatic resources, some of which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Act and/or Section 401 of the Clean Water Act.

Fish and Game Code Section 1940 – Sensitive Natural Communities

California Fish and Game Code Section 1940 requires CDFW to develop and maintain a vegetation mapping standard for the state. More than half of the vegetation communities in the state have been mapped through the Vegetation Classification and Mapping Program.

Natural vegetation communities are evaluated by CDFW and are assigned global (G) and state (S) ranks based on rarity of and threats to these vegetation communities in California. Natural communities with ranks of S1 through S3 (S1: critically imperiled; S2: imperiled; S3: vulnerable) are considered sensitive. Sensitive natural communities are communities that have a limited distribution and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitats. For purposes of this assessment, sensitive natural communities include vegetation communities listed in CDFW's California Natural Diversity Database and communities listed in the Natural Communities List with a rarity rank of S1, S2, or S3 (S1: critically imperiled; S2: imperiled; S3: vulnerable). Additionally, all vegetation associations within the alliances with ranks of S1 through S3 are considered sensitive habitats. CEQA requires that impacts to sensitive natural communities be evaluated and mitigated to the extent feasible.

There are no natural communities or vegetation alliances on the project site with a rarity rank of S1, S2, or S3. The valley foothill riparian woodland is considered a sensitive natural community regulated as part of the stream zone under Fish and Game Code Section 1600 (discussed above).

Fish and Game Code Section 1900-1913 – California Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) and the Natural Communities Conservation Planning Act provide guidance on the preservation of plant resources. Vascular plants which have no designated status or protection under state or federal endangered species legislation, but are ranked as rare or endangered by the CNPS, are defined as follows:

- Rank 1A: Plants presumed extinct
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
- Rank 3: Plants about which more information is needed – a review list
- Rank 4: Plants of limited distribution – a watch list

Generally, plants with CRPR of 1A, 1B, or 2 are considered to meet the criteria for endangered, threatened, or rare species as outlined by Section 15380 of the CEQA Guidelines. Additionally, plants listed on CNPS List 1A, 1B, or 2 also meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA) of the California Fish and Game Code.

Seven plant species with a CRPR of 1 or 2 were surveyed for during multiple protocol-level rare plant surveys conducted on the project site from 2007 to 2018, with only one identified as present (Butte County meadowfoam). An additional 11 plant species with a CRPR of 1 or 2 were added to the database queries as of December 2019. However, none of these species are expected to occur on the project site (see Table 4.3-7 in Appendix C). Based on the results of prior rare plant surveys of the project site, as well as a review of relevant literature, Butte County meadowfoam is the only plant present on the project site that is protected under the California Native Plant Protection Act.

California Fish and Game Code – Sections 3503, 3511, 3513

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

The project site provides nesting habitat for many bird species protected under Fish and Game Code Sections, 3503, 3511, and 3513. If raptors are present offsite but within visual and auditory range of the project site, nests of these species are protected during the breeding season. Similarly, nests of most native and migratory birds, including raptors, would need to be protected if present in or adjacent to the project site prior to project construction, if conducted during the breeding season.

California Fish and Game Code – Section 4150

California Fish and Game Code Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take as stated in California Fish and Game Code Section 4150.

There is a potential for native bats to forage on the project site and/or roost in trees onsite or in the vicinity. If bat maternity or overwintering colonies are present in or adjacent to the project site during construction, measures must be implemented to avoid take of native bats.

California Fish and Game Code – Sections 4700, 5515, 5050

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. California Fish and Game Code sections (fish at Section 5515, amphibians and reptiles at Section 5050, birds at Section 3511 (discussed above), and mammals at Section 4700) dealing with "fully protected" species state that these species may not be taken or possessed at any time, and no provisions in this code or any other law shall be construed to authorize permits for the take of fully protected species.

In October 2011, the State passed legislation allowing take of a fully protected species covered under an approved Natural Community Conservation Plan. Species of Special Concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or they historically occurred in low numbers and known threats to their persistence currently exist. This classification is intended to elicit special consideration for these animals by the CDFW, land managers, consulting biologists, and others. Additionally, this classification is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

American peregrine falcon is California Fully Protected species with a low potential to utilize the project site for nesting or foraging. Ringtail is a Fully Protected species with a moderate potential to occur on the project site. Take of these species, including harm or harassment of any kind, is not permitted.

California Environmental Quality Act

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been generally modeled after the definition in FESA and Chapter 1.5 of the California Fish and Game Code that addresses rare or endangered plants and animals. Appendix G of the CEQA Guidelines requires a lead agency to determine whether or not a project 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service." CEQA Guidelines Section 15065 requires that a lead agency find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species."

Local Regulations

City of Chico 2030 General Plan

The Open Space and Environment Element and Land Use Element of the Chico 2030 General Plan establishes the following goals, policies, and actions related to biological resources in the city limits that would be applicable to the proposed project, once annexed into the city:

Open Space and Environment Element

Goal OS-1: Protect and conserve native species and habitats.

Policy OS-1.1 – Preserve native species and habitat through land use planning, cooperation, and collaboration.

Action OS-1.1.1 (Development/Preservation Balance) – Direct development to appropriate locations consistent with the Land Use Diagram, and protect and preserve areas designated Open Space and areas that contain sensitive habitat and species.

Action OS-1.1.2 (Regional Conservation Planning) – Actively participate in regional conservation planning efforts, in particular the Butte County Habitat Conservation Plan process, sponsored by the Butte County Association of Governments, which seeks the preservation of habitat areas needed for the ongoing viability of native species.

Action OS-1.1.5 (Control Invasive Species) – Prioritize efforts to remove nonnative species within Bidwell Park and other City greenways, and condition new development adjacent to Bidwell Park and greenways to protect native species and habitat from the introduction of invasive species.

Policy OS-1.2 (Regulatory Compliance) – Protect special-status plant and animal species, including their habitats, in compliance with all applicable state, federal, and other laws and regulations.

Action OS-1.2.1 (State and Federal Guidelines) – Ensure that project-related biological impacts are considered and mitigated, and require applicants to obtain all necessary local, state, and federal permits for projects that may affect special-status species or their habitat.

Policy OS-1.3 (Light Pollution) – Reduce excessive nighttime light and glare.

Goal OS-2: Connect the community with a network of protected and maintained open space and Creekside greenways.

Policy OS-2.5 (Creeks and Riparian Corridors) – Preserve and enhance Chico's creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.

Action OS-2.5.1 (Setbacks from Creeks) – Consistent with the City's Municipal Code, require a minimum 25-foot setback from the top of creek banks to development and associated above ground infrastructure as a part of project review, and seek to acquire an additional 75 feet. In addition, require a larger setback where necessary to mitigate environmental impacts.

Policy OS-2.6 (Oak Woodlands) – Protect oak woodlands as open space for sensitive species and habitat.

Goal OS-3: Conserve water resources and improve water quality.

Policy OS-3.1 (Surface Water Resources) – Protect and improve the quality of surface water.

Action OS-3.1.1 (Comply with State Standards) – Comply with the California Regional Water Quality Control Board's regulations and standards to maintain, protect, and improve water quality and quantity.

Action OS-3.1.2 (Runoff from New Development) – Require the use of pollution management practices and National Pollutant Discharge Elimination System permits to control, treat, and prevent discharge of polluted runoff from development.

Land Use Element

Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.

Policy LU-2.5 (Open Space and Resource Conservation) – Protect open space areas with known sensitive resources.

Policy LU-2.6 (Agricultural Buffers) – Require buffering for new urban uses along the City's Sphere of Influence adjacent to commercial crop production. Landscaping, trails, gardens, solar arrays, and open space uses are permitted within the buffer. Design criteria for buffers are as follows:

- A minimum 100-foot-wide physical separation, which may include roadways and creeks, between the agricultural use and any habitable structure.
- Incorporate vegetation, as may be needed to provide a visual, noise, and air quality buffer.

Parks, Public Facilities and Services Element

Goal PPFS-2: Utilize creeks, greenways and preserves as a framework for a system of open space.

Action PPFS-2.1.2 (Creekside Design) – Continue to use Chico's Design Guidelines Manual for proposed development adjacent to creeks to address setbacks, building orientation, security measures, and lighting designed to promote the City's creeks and amenities without detracting from the natural setting.

Action PPFS-2.1.3 (Pathway and Trail Planning) – Design pedestrian and bicycle paths and trails adjacent to creeks that protect the riparian environment.

Action PPFS-2.1.4 (Assess Potential Impacts to Creeks) – Through the development and environmental review processes, including consultation with state and federal agencies, ensure that natural areas and habitats located in and along the City's creeks are protected and enhanced.

Goal OS-2: Connect the community with a network of protected and maintained open space and Creekside greenways to build knowledge and appreciation of these resources.

Policy OS-2.5 (Creeks and Riparian Corridors) – Preserve and enhance Chico's creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.

Other goals and policies of the General Plan related to water resource conservation and water quality improvement are also discussed in Section 4.9, Hydrology, Water Quality, and Drainage.

Figure LU-1, Land Use Diagram, in the General Plan identifies three Resource Constraint Overlay (RCO) areas within the City's Sphere of Influence. This designation acknowledges a reduced development potential in areas with known significant environmental constraints compared to allowable development potential based upon the underlying land use designation. The most significant environmental constraints at these locations are vernal pools, populations of Butte County meadowfoam, and habitat for Butte County meadowfoam. There are no RCO areas mapped on the project site. The nearest RCO area includes the undeveloped parcel adjacent to the western project site boundary.

City of Chico Municipal Code

Title 16, Chapter 16.66 of the City's municipal code requires that a permit be obtained prior to removal of any protected trees, which are defined in Chapter 16.66.050(K), and include "any live woody plant having a single perennial stem of 18 inches or more in diameter, or multi-stemmed perennial plant greater than 15 feet in height having an aggregate circumference of 40 inches or more, measured at four feet six inches above adjacent ground." Tree replacement requirements can be satisfied by planting onsite, off site, or paying an in-lieu fee.

Title 19 of the City's municipal code require a minimum 25-foot setback from the top of creek banks to development and associated above ground infrastructure as a part of project review. Wider setbacks may be necessary to mitigate for potential environmental impacts.

Butte Regional Conservation Plan

The Butte County Association of Governments is preparing the Butte Regional Conservation Plan (BRCP). The final BRCP documents were submitted to the USFWS, National Marine Fisheries Service (NMFS), and CDFW for final review on June 28, 2019. If approved, the BRCP would provide streamlined state and federal endangered species act and wetlands permitting for covered activities for a term of 50 years. The BRCP participants include Butte County, the City of Chico, the City of Oroville, the City of Gridley, the City of Biggs, Caltrans District 3, Western Canal Water District, Richvale Irrigation District, Biggs West-Gridley Water District, and Butte Water District.

The proposed project site is designated within an Urban Permit Area (UPA) in the BRCP and could be a covered activity under the BRCP. UPAs include areas where local agencies with jurisdiction in the BRCP Plan Area (and their respective general plans) anticipate urban development to occur. Covered activities within UPAs include (but are not limited to): residential, commercial, public, and industrial development projects, and recreational, transportation, and utility facility development projects. Any party seeking coverage under the BRCP for permanent development projects would need to comply with relevant conditions of the BRCP for covered species and natural communities. Conditions on permanent development projects inside UPAs that are relevant to the proposed project are summarized below. To see full descriptions of the following mitigation measures, see pages 6-2 through 6-10 of the BRCP (Butte County 2019).

AMM1 **Conduct Planning Surveys.** This measure requires planning-level surveys to identify covered species habitat and natural communities on or adjacent to the proposed project site. Planning surveys include habitat surveys and focused surveys for covered species, wetlands, and riparian habitat.

AMM2 **Conduct Preconstruction Surveys.** This measure requires preconstruction surveys for covered species with habitat present on or adjacent to a project site. For covered species known to occur onsite, the implementation of a setback from occupied may take the place of a preconstruction survey (with the exception of giant garter snake and burrowing owl).

AMM3 **Avoid and Minimize Impacts on Covered Species.** This measure requires that development projects to be designed to avoid and minimize impacts to covered species. Table 6-5 of the BRCP includes recommended setback distances between development and habitat for select covered species. Exceptions for setback distances may be permitted if approved by the appropriate agencies.

AMM4 **Avoid and Minimize Impacts on Wetland and Riparian Habitats.** This measure requires that development activities limit the amount of impacts to wetland and riparian habitat by not exceeding the "Maximum Acreage Removed by Covered Activities" for a given natural community or land cover type (see Table 4-2 in Chapter 4 of the BRCP). Where project impacts exceed these limits, additional fees and state and federal permits may be required.

AMM5 **Avoid Siting of Construction Staging Areas and Temporary Work Areas in Occupied Covered Species Habitat.** This measure requires that construction staging and other temporary work areas be sited within the permanent development footprint. Where this is unavoidable, staging and temporary work areas should be located within areas that can be more easily restored, such as grassland, or outside of occupied covered species habitat, riparian habitat, wetlands (including vernal pools), and away from active nest sites (including occupied burrowing owl burrows). Areas only temporarily disturbed must be restored to pre-project conditions or better within one year following project construction.

AMM6 **Establish Permanent Habitat Buffers along Stream and Riparian Corridors.** This measure requires that minimum permanent buffers be implemented between permanent development and streams and riparian corridors. Intermittent streams require a minimum 50-foot buffer from top of bank of both sides of the channel. If a riparian corridor is present and wider than 25 feet from top of bank, the buffer must be a minimum 25 feet from the edge of existing or restored riparian habitat. No minimum buffer distances are noted for ephemeral channels.

AMM7 **Design Developments to Minimize Impacts on Habitat at Urban-Habitat Interfaces.** This measure requires that permanent development plans be designed to incorporate urban-habitat interface design elements. Examples include designing drainage systems and appropriate BMPs to keep urban runoff from discharging to areas containing sensitive habitat (e.g., wetlands, streams, covered species habitat), maintaining fire breaks, and utilizing low-glare lighting adjacent to habitat areas.

AMM8 **Establish Temporary Activity Exclusion Zones for Nesting/Breeding Birds.** This measure requires the establishment of appropriate buffer distances (i.e., temporary activity exclusion zones) between development and nesting bird habitat during the breeding season, which may include (for certain covered species) active nest sites, burrow sites, nesting colonies, and winter roost sites. Exceptions for buffer distances may be permitted if approved by the appropriate agencies.

AMM9 **Establish Permanent Activity Exclusion Zones for Covered Plant Species.** This measure requires the establishment of appropriate buffer distances (i.e., temporary activity exclusion zones) between development and covered plant species. A buffer distance of at least 250 feet is required for mapped Butte County meadowfoam unless located in an already developed area or if hydrological barriers are present between the mapped plant(s) and development. Exceptions for buffer distances may be permitted if approved by the appropriate agencies. Encroachment into an exclusion zone may be counted as take.

AMM11 **Confine and Delineate Work Area.** When covered species habitat and natural communities are present, this measure requires that the limits of construction be delineated with fencing (or similar) and be minimized to the maximum extent necessary. In addition, access routes must be restricted to disturbed sites and existing roadways where possible.

AMM12 **Cover Trenches and Holes During Construction.** Where certain covered species, including western spadefoot, have the potential to occur on a construction site, this measure requires that holes and trenches be covered or escape ramps installed daily to prevent injury or death to certain species.

AMM13 **Control Fugitive Dust.** This measure requires dust control in accordance with Butte County Air Quality Management District requirements.

AMM14 **Conduct Worker Training.** This measure requires that all construction staff associated with a given permanent development project complete a worker environmental training program. The program must discuss covered species and their habitat present on site, measures to avoid impacts to these resources, relevant regulatory information, and legal implications of non-compliance.

AMM15 **Install Erosion Control Barriers.** This measure requires that erosion control barriers be installed to prevent runoff of loose soils or potential spills from entering wetlands, streams, riparian habitat, or similar. Erosion control materials must be weed-free and composed of coir, jute, straw, or excelsior.

AMM16 **Nighttime Lighting of Project Construction Sites.** Nighttime lighting necessary for construction must be limited to the construction site as much as feasible to minimize lighting in natural habitat. Exceptions apply where construction is adjacent to existing development or where additional lighting is needed to maintain public safety.

AMM17 **Implement Spill Prevention, Control, and Countermeasure Plan to Eliminate or Minimize Sources of Contaminants.** This measure requires that permanent development projects implement a Spill Prevention, Control, and Countermeasure Plan (SPCC).

AMM18 **Implement Additional Avoidance and Minimization Measures and Best Management Practices.** This measure requires that permanent development projects implement BMPs in accordance with Central Valley Regional Water Quality Control Board guidelines.

AMM19 **Exclusion of Wintering Western Burrowing Owls**. In the event that burrows occupied by burrowing owl cannot be avoided, this measure requires that an exclusion plan be prepared and implemented in accordance with *Staff Report on Burrowing Owl Mitigation* to avoid direct impacts to owls.

Valley's Edge Specific Plan

Chapter 2 of the VESP establishes the following guiding principles, goals, and actions related to biological resources. The VESP includes policies and actions that would direct development and future buildout of all phases of the project.

Chapter 2, Guiding Principles, Goals and Actions

Guiding Principle 1. Implement Chico's General Plan 2030: The Valley's Edge Specific Plan will align with the GP 2030's written description for the planning area (Appendix C), and its development will implement and or advance no less than 300 of the General Plan's goals, policies, or actions.

Guiding Principle 2: The Land Matters, Listen to It: Land planning and ongoing stewardship will carry an elevated appreciation for the preservation of Oak Woodlands, seasonal creek corridors, wetlands, ridgelines, and other cultural and historic elements which tell the story of the land and its inhabitants. Planning open space first will allow for the protection of important natural landforms landscapes and features, determining what around which areas are suitable for the built environment.

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-1: Consider Open Space First. Allow the site's natural form and character to inform all subsequent planning, and where practicable utilize open space to advance the VESP's Guiding Principles, Goals, and Actions, and the Goals, Policies and Actions expressed in the Chico General Plan.

Goal PROS-2: Framework of Permanent Open Space. Establish a framework of permanent open space that preserves sensitive habitat, respects natural features and landforms, visually and physically buffers development, forms lasting growth barriers, and utilizes natural landscapes to define and transition the edges of the built environment.

Goal PROS-3: Promote Outdoor Recreation & Complement Bidwell Park. Promote outdoor recreation by creating space and facilities which foster play, exercise, adventure, and social interaction. Strive to complement Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

> **Action PROS-3.1** – Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.
>
> **Action PROS-3.2** – Master plan parks, trails, and other recreational facilities to promote active, passive, inclusive, family and intergenerational outdoor experiences. Create spaces for people to

gather, socialize and interact, such as community gardens, community club-house(s), parks, ponds, and picnic areas, as well as naturalized in-route destinations such as play-pockets along the trail network, and rest areas along creek corridors.

Action PROS-3.3 – Deliberately plan parks, playgrounds, and other open space elements to bring nature back into people's lives, not only to foster children's play, but also to promote intergenerational play.

Action PROS-3.4 – Cooperate with Chico Area Recreation District (CARD) and Chico Unified School District (CUSD) in the planning of joint use public facilities to serve the community's anticipated need for quality recreational and educational facilities.

Action PROS-3.5 – Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan are within 350 yards of a park, trail, or open space element.

Action PROS-3.6 – Identify suitable land along the plan area's western boundary to accommodate a small lake for recreational purposes, located so as to enhance foreground views and encourage pedestrian, bike usage, while still accommodating vehicular access and parking.

Action PROS-3.7 – Make an irrevocable offer to donate no less than 370-acres of dedicated open space to the City of Chico as a Regional Park and preserve, and provide a means and mechanism to manage its use until such time as the land donation is accepted.

Action PROS-3.8 – Create and maintain no less than 20 miles of open space biking, hiking, and multi-use trails for recreation, play, exercise and non-motorized transit.

Goal PROS-4: Preserve Natural & Environmental Resources and Restore Sensitive Habitat. Utilize "avoidance by design" strategies and open space to preserve sensitive habitat, safeguard natural drainages, increase bio-diversity, provide for wildlife movement, and protect wetlands and riparian corridors previously degraded by a century of grazing.

Action PROS-4.1 — Natural landscape corridors shall be used for open space elements.

Action PROS-4.2 — Utilize native, drought tolerant, and fire-resistant landscape design and plantings in parks, streetscapes, and common areas.

Action PROS-4.3 — Support the restoration of riparian areas and seasonal streambeds to improve native biodiversity and enhance potential for groundwater recharge.

Goal PROS-6: Preserve and Renew Oak Woodlands. Preserve and renew Oak Woodlands, educate residents about oak trees, and increase the overall tree canopy over time.

Action PROS-6.1 — Utilizing a combination of remote sensing in Geographic Information Systems (GIS), aerial imagery, and sample plot ground truthing to conduct a property-wide baseline survey and assessment of tree resources to approximate total canopy coverage, the number of individual trees, tree species and the average diameter at breast height (DBH) as a basis for land planning and policy development.

Action PROS-6.2 — Ensure that no less than 80% of the total tree canopy is protected and preserved in parks, open space, and/or other areas where avoidance and preservation can be monitored and managed.

Action PROS-6.3 — Suspend cattle grazing to enable the survival of new growth seedlings and saplings.

Action PROS-6.4 — Participate in the City of Chico's Voluntary Heritage Tree Program.

Action PROS-6.5 — Conduct annual community events such as acorn harvest day and plant a tree day to stimulate resident engagement and environmental stewardship, and make readily available other information such as best management practices to plan area residents and businesses.

Action PROS-6.6 — Install interpretive signage at designated locations along the Class I path, neighborhood parks and the Village Core to promote public awareness and appreciation of oak trees.

Action PROS-6.7 — Implement the Oak Woodland Mitigation and Management Plan describing the VESP's Oak Woodland standards and implementation measures, in the VESP Appendix E.

Action PROS-6.8 — Incorporate a street-tree program (Appendix B) including oak and other native trees that will lead to the planting of new trees resulting in significantly greater tree canopy than exists pre-development, increasing carbon sequestration, fighting climate change, providing shade, and marking the seasons.

Section 2.3.2 Chapter 4: Land Use

Goal LU-2: Balance Growth and Conservation. Balance growth and conservation by reinforcing the City's compact urban form, by establishing urban growth limits, by managing where and how growth and conservation will occur, in addition to responding to Chico's housing demand, rental units, and commercial space in a responsible and comprehensively planned manner.

Action LU-2.4 — Promote groundwater recharge by preserving on-site seasonal creeks that could potentially recharge shallow aquifers west of the planning area.

Goal LU-3: Create Distinctive Form and Character. Create a distinctive character for the plan area by allowing natural landscapes features to define urban edges, by using trees, landscaping, fencing and architectural guidelines to unify the community, by enabling way-finding features, entry features, and gateways to promote sense of place and arrival to Chico and the VESP planning area.

Action LU 3-2 — Facilitate wayfinding by integrating informational signage and kiosks along trails, parks and public gathering places, and by incorporating landmark features at entries to residential villages.

4.3.3 Impacts and Mitigation Measures

Methods of Analysis

CEQA requires that projects analyze the potential impacts on special-status plant and animal species, as well as on sensitive habitats, wildlife corridors, and waters of the United States. Impacts on wildlife species that are not considered special-status under CEQA are generally not considered significant unless impacts are associated with the species' migration routes or movements, or the species are considered locally important. Therefore, impacts on common species (e.g., skunk, raccoon, andcoyote) that are not be considered special-status species are limited to their movements and migration routes. In addition, regardless of listing status, impacts on all nesting native bird species are addressed because they are protected from harm under the state Fish and Game Code and the federal MBTA.

The significance of impacts to biological resources was assessed by comparing the potential changes resulting from the proposed project to the significance thresholds listed below. An evaluation of whether or not an effect on biological resources would be substantial with respect to the significance thresholds generally considers the following:

- amount and/or extent of the resource (numbers, acres, etc.) to be affected versus preserved;
- the biological value (rarity, functions and values) and/or sensitivity status of the resource and its relevance within a specified geographical area;
- the type and severity of impact (i.e., would the project adversely affect wildlife through mortality, injury, displacement, or habitat loss or adversely impact vegetation through destruction of a sensitive plant population?);
- timing of the impact (i.e., would the impact occur at a critical time in the life cycle of a special-status plant or animal, such as breeding, nesting, or flowering periods?); and
- duration of the impact (i.e., whether the impact is temporary or permanent).

The analysis of direct and indirect impacts covers construction, operation, and maintenance of the proposed project. Direct impacts include those that would occur immediately as a result of the proposed project on a particular biological resource. Indirect impacts refer to off-site and on-site "edge effects" that are short-term (i.e., not permanent) and result from project construction or long-term (i.e., permanent) due to the design of the project and the effects it may have to adjacent resources. Examples of "edge effects" include dust, noise, and general human presence that may temporarily disrupt species and habitat vitality and construction-related soil erosion and runoff.

The following sources were reviewed in the process of evaluating potential project impacts including the Valley's Edge Specific Plan (City of Chico 2020), all of the biological reports prepared by Gallaway Enterprises listed in Table 4.3-1, online databases that include the California Native Plant Society (CNPS) Online Inventory, California Natural Diversity Database (CNDDB), and U.S. Fish and Wildlife Service's (USFWS) list of threatened and endangered species, and relevant Federal, State, and local regulations and plans as they relate to sensitive biological resources. Copies of the biological reports listed above are included in Appendix C.

The impact analysis includes potential impacts to areas south and east of the project site slated for off-site utility improvements.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- 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 the CDFW or USFWS.
- Have 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.

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

Threshold Criteria not Applicable to the Proposed Project

Habitat Conservation Plan/Natural Community Conservation Plan

As indicated in Section 4.3.2 Regulatory Setting (above), the proposed project may be implemented in accordance with the BRCP once the BRCP is adopted. The ways by which the proposed project would comply with the BRCP are described throughout Section 4.3.3 Impacts and Mitigation (below). Compliance with the BRCP is addressed, as relevant, in the impact analysis although compliance with the BRCP is not required.

Project Impacts

4.3-1 The proposed project could have a substantial adverse effect on a candidate, sensitive, or special-status species.

Implementation of the proposed project has the potential to impact special-status species through permanent conversion of habitat, temporary construction-related impacts, and/or operation and maintenance activities. Potential impacts on special-status species and their habitat that could result from eventual project implementation are addressed below.

Special-Status Plant Species

As discussed in Section 4.3.1, Environmental Setting, only one special-status plant species has been identified and mapped on the project site: Butte County meadowfoam. No other special-status plant species are expected to occur on the project site due to a lack of habitat within or immediately adjacent to the site, because the site is outside of the species' known geographic and/or elevation range, or because the species was not identified on the project site during multiple protocol-level surveys conducted from 2007 to 2018.

Butte County Meadowfoam. Butte County meadowfoam, a federal and state endangered and CRPR 1B.1 species, was mapped on the project site during protocol-level rare plant surveys conducted in 2010, 2016, and 2018 (see Figure 4.3-4. Butte County Meadowfoam Occurrences and Appendix C). According to the VESP, approximately 20 acres of land surrounding the mapped Butte County meadowfoam populations would be set aside as two of the three environmental preserves. The Butte County meadowfoam preserves would be managed by a qualified land trust for resource conservation purposes. No recreational access to these areas would be allowed.

There are thousands of Butte County meadowfoam plants mapped just west of the Steve Harrison Memorial Bike Path, within 250 feet of the western project site boundary (CDFW 2020b, WRA 2018). Some of these plants would be impacted through development of the adjacent Stonegate development project (City of Chico 2018), but those that are just south of East 20th Street would be preserved in perpetuity as part of the avoidance mitigation for the Stonegate development project (City of Chico 2018). The vernal pool complexes

where the Butte County meadowfoam occur are hydrologically separated from the project site by the bike path and rock walls, which would prevent indirect effects from the project. There are no other records of Butte County meadowfoam within 250 feet of the proposed project site.

The VESP notes that preserves would need to be established to protect Butte County meadowfoam; however, the plan sets no clear parameters for the meadowfoam preserves, including timing for establishment or management or monitoring requirements. Preserve establishment to protect the on-site Butte County meadowfoam would prevent direct project effects, but project construction and operation could potentially cause indirect effects to the Butte County meadowfoam including but not limited to runoff, dust, or introduction of invasive plant species. These are considered **potentially significant impacts**.

Special-Status Wildlife Species

As discussed in Section 4.3.1, Environmental Setting, there are 14 special-status wildlife species with a potential to occur on the project site: Conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, western spadefoot, tricolored blackbird, burrowing owl, Swainson's hawk, American peregrine falcon, loggerhead shrike, yellow warbler, pallid bat, western red bat, ringtail, and American badger. In addition, native and migratory birds protected by the California Fish and Game Code have a potential to occur on site. These species are addressed below.

Vernal Pool Branchiopods. Although vernal pools on the project site provide potential habitat for listed branchiopods (i.e., conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp), none were identified during protocol-level wet and dry season surveys of the proposed project site (Appendix C). However, 22 of the 53 total vernal pools surveyed were only surveyed during the dry season. Of these 22 vernal pools, only 9 were determined to provide marginally suitable habitat for listed branchiopods; the remaining 13 were determined to lack sufficient water to support these species' lifecycles. The 9 vernal pools that provide marginal habitat are located within areas proposed as environmental preserves or as regional open space and would not be directly impacted by the proposed project. Given the lack of nearby records for listed branchiopods and negative results of wet season surveys in other pools on the project site, the likelihood for listed branchiopods to establish in these features prior to project implementation is low.

The ACOE and USFWS often consider vernal pools within 250 feet of a project site to be indirectly affected. According to the USFWS National Wetlands Inventory (2020), there are three freshwater emergent wetlands, three freshwater forested/shrub wetlands, and one freshwater pond mapped within 250 feet of the project site boundary. None of these wetlands are within 250 feet of the edge of proposed development on the project site. Although these wetlands provide potential habitat for a number of plant and wildlife species, they do not appear to exhibit seasonal vernal pool hydrology based on a review of aerial photos (Google Earth 2020). As such, these wetlands provide poor quality habitat for branchiopods, such as fairy or tadpole shrimp. For these reasons, **no impacts** to listed branchiopods, including conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, are anticipated.

Western Spadefoot. No western spadefoot were observed during site surveys; however, no focused surveys for western spadefoot were conducted and this species is nocturnal, cryptic and unlikely to be detected during general biological surveys. The only portion of the project site that has potential habitat for western spadefoot is the northwestern portion of the project site, and that area is designated as an environmental preserve in the VESP. Environmental preserves proposed as part of the VESP would be set aside for resource conservation purposes and would be managed by a qualified land trust. For these reasons, **no impacts** to western spadefoot are anticipated.

Tricolored Blackbird. Within the project site, open grassland provides potential foraging habitat for tricolored blackbird and dense patches of vegetation may provide potential nesting habitat. Overall, potential nesting habitat for tricolored blackbird is marginal and generally limited to the riparian woodland in the southern portion of the project site where thorny vegetation may be present in the understory. No tricolored blackbirds were observed during prior site surveys; however, no focused surveys for this species have been conducted. This species is relatively conspicuous during breeding and nesting due to its distinct loud calls and regular flights to nearby foraging habitat and would likely have been noted by biologists visiting the site. As discussed in Section 4.3.1. Environmental Setting, there is one citizen science record from 2013 for a nesting colony approximately 0.38 miles south of the project site (eBird 2020). Given the marginal potential nesting habitat and lack of observations of the species on the site over several years, this is considered a **less-than-significant impact**.

Burrowing Owl. Within the project site, open grassland provides potential foraging, wintering, and nesting habitat for burrowing owl. As discussed in Section 4.3.1. Environmental Setting, burrowing owl has been previously documented on the project site but has not been observed during other site surveys since 2008. Construction activities such as grading and operation of heavy equipment could result in the abandonment or failure of active burrows either through direct destruction of burrows or through indirect effects from noise and vibration associated with construction equipment. This is considered a **potentially significant impact.**

Swainson's Hawk. Although large trees on the project site provide marginal potential nesting habitat for Swainson's hawk, this species was not detected during prior site surveys, and there are no recent nesting occurrences within 10 miles of the project site. Nest records in the region are generally limited to the valley where agricultural lands for foraging are abundant. For these reasons, impacts to Swainson's hawk are anticipated to be **less than significant**.

American Peregrine Falcon. Tree snags in the riparian woodland on the project site provide marginal nesting habitat for American peregrine falcon. This species typically relies on cliffs and ledges for nesting, as well as perennial water bodies for foraging; none of these are present on the project site. The falcon could forage in the riparian woodland along Comanche Creek, but the likelihood of nesting in this area is low as the creek only flows seasonally. The nearest documented occurrence is for a pair of adults nesting on a cliff at an unspecified location northeast of the project site. No development is proposed within 300 feet of the riparian woodland. For these reasons, impacts to peregrine falcon are anticipated to be **less than significant**.

Loggerhead Shrike, Yellow Warbler, and Other Nesting Birds. Scattered trees and vegetation in open areas provide potential nesting habitat for loggerhead shrike, and the riparian woodland onsite provides potential nesting habitat for yellow warbler. As discussed in Section 4.3.1. Environmental Setting, both loggerhead shrike and yellow warbler have been recently documented near the project site. Other native and migratory birds protected by the MBTA and California Fish and Game Code, such as killdeer (*Charadrius vociferous*), western bluebird (*Sialia mexicana*), and western kingbird (*Tyrannus verticalis*), have been documented during prior site surveys and could use the project site for nesting. Potential impacts to loggerhead shrike, yellow warbler, and other native or migratory bird nests would be related to nest failure or abandonment due to disturbance during construction. These are considered **potentially significant impacts** as nesting birds are treated as special-status under the state Fish and Game Code and the federal MBTA.

Pallid Bat, Western Red Bat, and Other Roosting Bats. No bats or their sign (e.g., guano, staining, prey remains) were documented during prior site surveys; however, no formal roost assessment or focused surveys for bats have been performed on the project site. The project site provides roosting habitat for bats in tree hollows, exfoliating bark on trees, abandoned woodpecker holes, and in the foliage of trees and shrubs within the riparian woodland. Foraging habitat for bats on the project site includes open wooded areas near aquatic habitat (e.g., wetlands and stream) and the riparian woodland along Comanche Creek.

Should any active bat maternity or overwintering roosts occur in or adjacent to the project site during project initiation, the species could be impacted by construction-related activities, such as tree removal and loud equipment operation. In addition, tree removal could reduce roosting habitat, and permanent development could fragment habitat foraging and roosting habitat for bats. These are considered **potentially significant impacts.**

American Badger. The project site provides low quality habitat for American badger due to prey scarcity and lack of burrowing soils. No American badger, or suitably-sized burrows for this species were documented during prior site surveys. In addition, there are no documented occurrences for American badger within 10 miles of the project site. This species could move through the project site when sufficient cover is present, but is not expected to burrow onsite. For these reasons, **no impacts** to American badger are anticipated.

Ringtail. No ringtail were documented during prior site surveys; however, they have been documented in riparian woodland habitat less than 1.5 miles south of the project site (see details in Section 4.3.1, Environmental Setting). Ringtail could move through the riparian woodland on the project site at night or dusk, but are not expected to den in the area as it lacks permanent water and contains limited protective cover and riparian habitat (less than 1% of project site). The proposed project site would preserve the riparian habitat within an approximately 370-acre regional park. For these reasons, **no impacts** to ringtail are anticipated.

Off-Site Infrastructure

No special-status plant species were identified within the area where future wastewater infrastructure would be required; therefore, there would be no impacts to protected plant species. Suitable habitat was identified for the pallid bat, the western pond turtle, and native and migratory birds protected by the California Fish and Game Code. The off-site utilities would be constructed within existing roadway ROW or within existing utility corridors. Utilities would be installed within the roadway shoulder of Skyway, Morrow Lane, and Cramer Lane and would occur within the paved portion of E. 20th Street, Midway and Entler Avenue. The 1,172-foot long segment between Cramer Lane and Entler Avenue contains valley oak woodland and highly disturbed grassland. Construction could require some tree and temporary vegetation removal to accommodate trenching. Several elderberry shrubs, which could provide habitat for the valley elderberry longhorn beetle (VELB), were recorded immediately adjacent to the utility corridor. Habitat for western pond turtle was also identified along Comanche Creek.

Western Pond Turtle. Comanche Creek contains fast-moving water with fresh emergent wetland fringes and woody debris. The wetland fringes are suitable areas for western pond turtles to find refuge and food. However, the dense closed canopy vegetation and fast-moving water present within Comanche Creek makes it only moderately suitable habitat for western pond turtles. There is one CNDDB occurrence of western pond turtle within close proximity of Comanche Creek, located approximately a half-mile west of the survey area. The CNDDB occurrence (#1227) was recorded in 2010 and is presumed extant. No western pond turtles were observed during the habitat assessment along the proposed off-site utilities corridor. There is a low potential for western pond turtles to occur within the portion of Comanche Creek where the off-site utilities are proposed based on the presence of suitable aquatic habitat and the CNDDB occurrence in 2010. If turtles are present, noise, vibration and human presence from nearby construction could cause them to abandon the area or avoid nesting in adjacent uplands. The dense closed canopy vegetation and fast-moving water present within Comanche Creek makes the area only moderately suitable habitat for western pond turtles. However, because there is a potential the turtles could be present this is considered a **potentially significant impact.**

VELB. Five elderberry shrubs were identified adjacent to segments B and C of the proposed off-site utilities corridor. All elderberry shrubs occur outside but adjacent to the survey area. Two elderberry shrubs occur within the Caltrans right-of-way. All of the shrubs have large multiple stems and occur in riparian habitat and appear to have exit holes although no fresh or current exit holes were observed. Per the *Framework for Assessing Impacts to Valley Elderberry Longhorn Beetle*, the project biologist, Gallaway Enterprises, consulted with the USFWS to confirm no impacts to VELB would occur associated with construction of the off-site utilities and no compensatory mitigation would be required. The USFWS concurred with the finding of no direct impact and no effect on VELB would occur (Appendix C). However, due to the proximity of the shrubs to the proposed utility corridor there is the potential construction activities could indirectly impact the plant. This is considered a **potentially significant impact.**

Avian Species. The vegetation within the off-site utilities area provides minimal habitat for nesting birds protected under State or federal law. However, adjacent areas such as the riparian corridor of Comanche Creek do provide suitable nesting habitat and could be indirectly affected by construction activities in the off-site utilities area. This is considered a **potentially significant impact.**

Bat Species. No bats or their sign (e.g., guano, staining, prey remains) were documented during the site survey; however, no formal roost assessment or focused surveys for bats have been performed for the off-site utilities. The area provides roosting and foraging habitat for bats in tree hollows, exfoliating bark on trees, abandoned woodpecker holes, and in the foliage of trees and shrubs, and within open wooded areas near aquatic habitat (e.g., wetlands and stream) and the riparian woodland along Comanche Creek.

Should any active bat maternity or overwintering roosts occur in or adjacent to the off-site utilities area during project initiation, the species could be impacted by construction-related activities, such as tree removal and loud equipment operation. In addition, tree removal could reduce roosting habitat, and permanent development could fragment habitat foraging and roosting habitat for bats. These are considered **potentially significant impacts.**

No habitat assessment was conducted for the proposed roundabout on Skyway because it is anticipated construction would occur within the existing roadway right-of-way. Once plans are available for this component it may require a habitat assessment be conducted to confirm the absence of any protected biological resources. Thus, direct and indirect impacts to VELB, nesting birds, and western pond turtle are considered **potentially significant.**

Mitigation Measures

If future project developers proceed to implement the proposed project as a 'permanent development project' as defined by and covered under the BRCP, once it is adopted, they would be required to comply with the Butte Regional Conservation Plan AMM1 through 19 (excluding AMM10) for the two covered species present onsite (Butte County meadowfoam and burrowing owl) and four covered species with a moderate potential to occur on the project site (western spadefoot, loggerhead shrike, yellow warbler, and pallid bat). In addition to these AMMs that would avoid and reduce project impacts to species and species habitat, the BRCP would establish a range of biological goals and objectives that must be achieved by the BRCP Permittees over the proposed 50-year permit term. By payment of fees into an adopted BRCP program, the proposed project would contribute to regional scale habitat preservation, restoration, and creation that would mitigate for impacts to biological resources identified in this EIR. Participation in the BRCP, if it is adopted, would satisfy mitigation requirements under CEQA for species covered under the BRCP.

If future project developers do not opt to seek coverage under the BRCP, or if the BRCP is not adopted prior to development, then the following mitigation measures would be implemented to avoid and/or substantially lessen impacts to special-status plant and wildlife species. With implementation of the BRCP AMM measures or mitigation measures listed below, the proposed project would reduce potential impacts to special-status species and their habitat to **less than significant**.

BIO-1: **On-Site Preserves.** The developer shall prepare a Habitat Mitigation and Monitoring Plan, record easements, and complete other requirements, as necessary, to establish the two Butte County Meadowfoam preserves and the other preserve on the VESP project site in compliance with all applicable state and federal resource agency permits. The preserves shall be separated from any development by a minimum of 250 feet unless site-specific hydrological analysis accepted by the U.S. Fish and Wildlife Service demonstrates that a reduced separation would still prevent direct or indirect effects to Butte County meadowfoam within the preserve. The VESP Habitat Mitigation and Monitoring Plan shall include at a minimum: management techniques to be used on the preserves; monitoring methods and frequencies to detect changes in Butte County Meadowfoam and allow for adaptive management; and a funding strategy to ensure that prescribed monitoring and management would be implemented in perpetuity to ensure efficacy of the preserves. Management methods shall include controls on introduction and spread of invasive plant species, and requirements for fencing to control public access and pet entry into preserves. No development shall be approved by the City within 500 feet of the avoidance area until the preserves are established.

BIO-2: **Nesting Bird Surveys (including and not limited to Loggerhead Shrike, and Yellow Warbler).** Nesting bird surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, on-site and for off-site infrastructure, including site clearing and tree removal and tree removal for installation of required off-site utilities. (Note: BIO-2 is consistent with AMM2, 3, 5, and 8 in the BRCP (Butte County 2019)). Preconstruction surveys for these species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met.

(a) A qualified biologist shall conduct a preconstruction survey for nesting birds approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (March through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet for raptors and 100 feet for other nesting birds, as feasible.

(b) If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 300 feet, and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.

(c) If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal

activities. It is recommended that disturbing potential nesting habitat (i.e., trimming and/or vegetation removal) be performed outside of the nesting season (September through February) to avoid impacts to nesting birds.

(d) If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged and/or full-time monitoring by a qualified biologist during construction activities conducted in close proximity to the nest.

BIO-3: **Burrowing Owl.** Burrowing owl surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including on-site and off-site (infrastructure) clearing and tree removal. (Note: BIO-3 is consistent with AMM2, 3, 5, 8, and 19 in the BRCP (Butte County 2019)). Preconstruction surveys for this species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met.

(a) Within 14 days prior to the anticipated start of construction, a qualified biologist shall conduct preconstruction surveys within the project site to identify burrowing owls or their nesting areas. This survey shall follow survey protocols as developed by the Burrowing Owl Consortium (CDFW 2012). If no active burrows or burrowing owls are observed, no further mitigation is required. If a lapse in construction of 15 days or longer occurs during the nesting season, additional preconstruction surveys shall be repeated before work may resume.

(b) If burrowing owls or active burrows are identified within the project site during the preconstruction surveys, the following measures shall be implemented:

- During the non-breeding season for burrowing owls (September 1 through January 31), exclusion zones shall be established around any active burrows identified during the preconstruction survey. The exclusion zone shall be no less than 160 feet in radius centered on the active burrow. With approval from the City after consultation with California Department of Fish and Wildlife (CDFW) and a qualified biologist, burrowing owls shall be passively evicted and relocated from the burrows using one-way doors. The one-way doors shall be left in place for a minimum of 48 hours and shall be monitored daily by the biologist to ensure proper function. Upon the end of the 48-hour period, the burrows shall be excavated by the biologist with the use of hand tools and refilled to discourage reoccupation.
- During the breeding season (February 1 through August 31), a qualified biologist familiar with the biology and behavior of this species shall establish exclusion zones of at least 250 feet in radius centered on any active burrow identified during the preconstruction survey. No construction activities shall occur within the exclusion zone as long as the burrow is active and young are present. Once the breeding season is over and young have fledged, passive relocation of active burrows may proceed as described in measure BIO-3(b), above.
- The buffer widths may be reduced with the following measures:
    - A site-specific analysis, reviewed and approved by City after consultation with CDFW, shall be prepared by a qualified biologist that documents and describes

how the nesting or wintering owls would not be adversely affected by construction activities;

- Monitoring shall occur by a qualified biologist for a minimum of 10 consecutive days following initiation of construction indicating that the owls do not exhibit adverse reactions to construction activities;
- Burrows are not in danger of collapse due to equipment traffic; and
- Monitoring is continued by a qualified biologist at least once a week through the nesting/wintering cycle at the site and no change in behavior by owls is observed; biological monitoring reports shall be submitted to CDFW.

BIO-4: **Swainson's Hawk.** Swainson's hawk surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including on-site and off-site (infrastructure) clearing and tree removal. (Note: BIO-4 is consistent with AMM2, 3, and 8 in the BRCP (Butte County 2019)). Preconstruction surveys for this species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met.

(a) If construction (including site clearing and grading) occurs during the nesting season for Swainson's hawk (March 1 through August 31), a qualified biologist shall conduct preconstruction surveys no more than 15 days prior to construction to identify nesting Swainson's hawk within 0.25 mile of the project site. If a lapse in project-related construction activities of 15 days or longer occurs, additional preconstruction surveys shall be conducted prior to reinitiating work.

(b) If an active Swainson's hawk nest is identified within 0.25 mile of the project site, an exclusion buffer shall be established in consultation with the biologist and California Department of Fish and Wildlife (CDFW). No construction work such as grading, earthmoving, or any operation of construction equipment shall occur within the buffer zone unless in consultation with and approved by CDFW. Construction may commence normally in the buffer zone if the nest becomes inactive (e.g., the young have fully fledged), as determined by the qualified biologist.

BIO-5: **Bats (including Pallid Bat and Western Red Bat).** Bat surveys shall be conducted by the project developer or construction contractor(s) prior to commencing any construction activities, including site clearing and tree removal on the project site and associated with construction of off-site wastewater utilities. (Note: BIO-5 is consistent with AMM2 and 3 in the BRCP (Butte County 2019)). Preconstruction surveys for these species may be completed at the same time as other required preconstruction surveys, provided the individual requirements of each preconstruction survey are met.

A qualified biologist shall conduct a preconstruction survey for bat roosts within 14 days prior to project construction activities (including site clearing and grading). The survey shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano in the construction footprint and within 50 feet. Potential roosting features found during the survey shall be flagged or marked. If bats (individuals or colonies) are detected, the California Department of Fish and Wildlife (CDFW) shall be notified immediately. If a bat roosting or maternity colony cannot be completely avoided, a qualified biologist shall prepare a bat mitigation and monitoring plan for CDFW review and approval. Potential measures to be included in the plan are restrictions of timing of activities, placement of exclusion barriers when bats are foraging away from the roost, and replacement of roosting structures.

BIO-6: **Western Pond Turtle (Off-site Utilities only).** Prior to initiating any site clearing associated with construction of the off-site wastewater utility segment between Cramer Lane and Entler Avenue in the portion within western pond turtle habitat along Comanche Creek, the project developer shall retain a qualified biologist to conduct a western pond turtle pre-construction survey. If western pond turtles are identified in an area where they could be impacted by construction activities, then a biologist trained in relocating western pond turtles shall relocate the turtles outside of the work area or create a species protection buffer (determined by the biologist) until the turtles have left the work area. If a nest is found, a species protection buffer (determined by the biologist) shall be established and avoided until the young have hatched or the eggs proven non-viable, as determined by the biologist.

BIO-7 **VELB (Off-site Utilities Only).** Per the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017), avoidance of elderberry shrubs during construction associated with the off-site wastewater utility lines, specifically shall be achieved by implementing a core avoidance area of 20 feet from the drip-line of each elderberry shrub measuring 1 inch or greater in diameter at ground level. The following avoidance and minimization measures shall be implemented by the project developer or construction contractor(s) prior to and during construction activities:

(a) *Fencing*. All areas to be avoided during construction activities shall be fenced and/or flagged as close to construction limits as feasible.

(b) *Avoidance area*. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the dripline, depending on the type of activity.

(c) *Worker education*. A qualified biologist shall provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

(d) *Construction monitoring*. A qualified biologist shall monitor the work area at appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring shall depend on the construction specifics and, if required, the biologist shall consult with the U.S. Fish and Wildlife Service.

(e) *Timing.* To the extent feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, shall be conducted outside of the flight season of the VELB (March - July).

(f) *Trimming/Mowing*. No trimming of the elderberry shrubs shall occur and no mowing or mechanical weed removal within the drip-line of the elderberry shrub shall be allowed between the months of March through July, when the adult VELB are active.

4.3-2 The proposed project could have an adverse effect on riparian habitat or some other sensitive natural community.

Approximately 13 acres of riparian habitat is present in the southern portion of the project site. The habitat is identified as valley foothill riparian woodland and mapped along Comanche Creek for most of its length in the project site. As discussed in Section 4.3.1, Environmental Setting, this vegetation community forms a continuous canopy composed of blue oak and foothill pine, with a lesser abundance of interior live oak. The understory varies in coverage, with shrubs more common below canopy openings. Within the project site, riparian habitat ranges from approximately 230 to 400 feet wide. No other riparian habitat or other sensitive natural communities occur within the project site.

The VESP does not propose permanent development within or adjacent to riparian habitat on the project site and includes Action PROS-4.3, which supports the restoration of riparian areas and seasonal streambeds to improve native biodiversity and enhance potential for groundwater recharge. The valley foothill riparian woodland is located within a 370-acre area identified as a regional park in the VESP. There are multiple trailheads proposed that would allow residents access to the regional park, and approximately 12 miles of nature trails proposed throughout the park. Nature trails would be approximately 2 to 4 feet wide and surfaced with native soil. Where appropriate, some of these trails may be widened and enhanced with hardened natural surfaces (e.g., gravel or decomposed granite).

The development of trails within the park would increase human activity in the area, which could result in direct impacts to riparian habitat from off-trail use. Off-trail use by residents and visitors could result in trampling and degradation of the riparian vegetation community within the project site, and off-trail use could lead to the introduction and/or spread of invasive species, potentially reducing the overall ecological functions and values of this community. As planned under VESP Action LU-3.2 and Action PROS-6.6, the project would include interpretive signage to educate residents and visitor about the sensitivity of the natural habitat on the project site. The project does not provide specific information regarding potential fencing along the open space trails but does state that boardwalks and bridges may be used to span biologically sensitive areas. These are considered **potentially significant impacts.**

The proposed project would involve oak tree removal to support permanent development. As stated in Chapter 2, Project Description, trees on the project site would be avoided to the extent feasible, and mature trees would be retained where possible. According to the VESP, approximately 80% of oak canopy on the project site would be preserved as permanent open space, per Action PROS-6.2 which states that "no less than 80% of the total tree canopy shall be protected and preserved in parks, open space, and/or other areas where avoidance and preservation can be monitored and managed". Furthermore, the proposed project would be implemented in accordance with VESP Appendix E, Oak Woodland Mitigation and Management Plan (OWMMP). These include requirements for arborist survey of all trees that may be encroached upon by project development, and preparation by that arborist of a Tree Preservation Plan. The OWMMP provides an additional layer of protection to existing oak canopy in the proposed development areas and elsewhere on the project site through avoidance, preservation, enhancement, education, and replacement or regeneration. For example, the OWMMP requires specific procedures to be followed to protect avoided trees if roots are to be cut as part of the construction process. The OWMMP also directs that, when trees (including dead or diseased) are removed, the trunks and other large wood debris would be left in open space areas to allow the natural cycle of decay to continue and place nutrients back into the environment, when feasible. The OWMMP includes measures for continued tree protection following development on the project site, including educational signage highlighting the importance of oak tree preservation, as well as Homeowner Association guidance for residences with oak trees and/or woodlands on or adjacent to their property. Based on the VESP, an estimated 200 acres of blue oak foothill pine woodland may be converted to permanent development to accommodate the project. The project developer(s) shall appropriately mitigate for trees removed and/or damaged by the project in accordance with the VESP OWMMP(such as planting onsite, off site, or paying an in-lieu fee). Per VESP Action PROS-6.4, the Voluntary Heritage Tree Program (CMC Section 16.68) would be applied for trees within the project site that may be considered a 'Heritage Tree.' The removal of trees is considered a **potentially significant impact.**

Off-site Infrastructure

It is not anticipated trees would be required to be removed to accommodate the off-site infrastructure, but if required the applicant would obtain the required permits. The habitat assessment conducted for the off-site wastewater infrastructure did not identify any sensitive natural communities within the survey area. However, because utility work would be located near Comanche Creek there is the potential for indirect impacts to occur. A habitat assessment has not been conducted for the proposed roundabout because it is anticipated to be constructed within the right-of-way of Skyway. However, impacts to trees and sensitive natural communities associated with construction of any off-site utilities is considered **potentially significant.**

Mitigation Measures

With implementation of Mitigation Measures BIO-8 and BIO-9 which require implementation of Best Management Practices during construction and methods to ensure protection of trees slated for preservation, compliance with these measures would reduce potential impacts to riparian habitat and protected trees to less than significant. Mitigation Measure BIO-8 is also consistent with the City's 2030 General Plan (see Action OS-1.1.5) which requires revegetation of disturbed areas with native seeds and implementation of measures during construction and operation to control spread of invasive plant species, which would ensure impacts related to invasive plant species spread are reduced to less than significant.

BIO-8: **Sensitive Natural Communities.** The following Best Management Practices shall be implemented by the project developer or construction contractor(s during construction of all trail construction or utility extensions within 100 feet of the contiguous tree canopy associated with the Valley foothill riparian woodland along Comanche Creek, especially for any drainage crossings, to control pollutant sources associated with the handling and storage of construction materials and equipment, as well as waste management and disposal. (Note: BIO-8 is consistent with AMM4, 5, 7, 11, 15, 17, and 18 of the BRCP (Butte County 2019)).

(a) Construction raw materials (e.g., concrete mix, paints, petroleum products) shall be stored in designated areas that are located at least 100 feet away from the top of bank of avoided drainages and are surrounded by earthen berms or other barriers, if necessary.

(b) Year-round, install temporary barriers around soil stockpile perimeters to prevent contact with stormwater when required. Temporary barriers can be berms, dikes, silt fences, straw bales, or sandbag barriers. During the rainy season (generally December to April), cover inactive soil stockpiles or protect them with soil stabilization at all times. During the non-rainy season, cover inactive soil stockpiles or protect them with linear barriers prior to rain events.

(c) Wash out concrete trucks off-site, in designated areas. If the trucks are washed on site, contain the wash water in a temporary pit adjacent to the construction activity where waste concrete can harden for later removal, no nearer than 100 feet from the top of bank of avoided drainages. Place signs at the designated washout locations and instruct drivers of the washout locations. Avoid washing fresh concrete from the trucks, unless the runoff is drained to a berm or level area, at least 100 feet away from the top of bank of avoided drainages.

(d) Collect non-hazardous waste construction materials (e.g., wood, paper, plastic, cleared trees and shrubs, scrap metal, rubber, glass) and deposit in covered dumpsters at a designated waste storage area on-site at least 100 feet away from the top of bank of avoided drainages. Recyclable construction materials shall be stored separately for recycling.

(e) Hazardous materials shall be stored in portable metal sheds with secondary containment. The quantities of these materials stored on-site shall reflect the quantities needed for site construction. Avoid over-application of fertilizers, herbicides, and pesticides. Do not mix hazardous waste with other waste produced on site. Contract with a Certified Waste Collection contractor to collect hazardous wastes for disposal at an approved hazardous waste facility. Waste oil and other equipment maintenance waste shall be properly disposed of in compliance with federal, state and local laws, regulations and ordinances.

(f) Areas temporarily disturbed during construction, for both on-site and off-site utilities, shall be revegetated with native species or sterile non-native species to reduce the spread of invasive plants in the project area. Decontamination of tools and equipment shall be required prior to entering the project site to prevent introduction and/or spread of invasive species in the area. During operation of the project, the Homeowners Association shall retain a qualified biologist to monitor trails within open space areas every 5 years to determine whether vegetation and soil disturbance is extending outside designated trails. Open space trails shall also be monitored for establishment and spread of non-native invasive plant species. If new non-native plants are found during monitoring, the Homeowners Association shall prepare and implement a plan to eradicate the non-native plant species, in coordination with the City.

(g) Prior to the initiation of ground-disturbance activities, the limits of disturbance within 100 feet of the riparian corridor shall be fenced and sediment and erosion control measures shall be utilized, which could include, but are not be limited to, biodegradable straw wattles free of weed seeds, silt fencing, or biodegradable erosion control mats/blankets. No construction, staging areas, or other ground-disturbance activities shall be permitted beyond the fencing.

BIO-9: **Tree Protection.** To protect existing trees on the project site and along the off-site utilities areas from damage associated with construction activities and to avoid soil compaction in the root zone, the project developer or construction contractor(s) shall implement the below measures in addition to those required for compliance with the goals and policies of the City of Chico 2030 General Plan, City of Chico Municipal Code, (Title 16, Chapter 16.66), the Oak Woodland Mitigation and Management Plan (OWMMP; Appendix E of the VESP), and AMM 11 of the BRCP (Butte County 2019).

(a) No construction vehicles, construction equipment, mobile offices (e.g., trailer), or materials shall be parked, stored or unnecessarily located within the driplines of any trees to be retained by the project.

(b) If work or temporary traffic must proceed within the driplines, one of the following techniques shall be followed: (1) place 6-12 inches of mulch in the work or traffic area; (2) place at least 4 inches of mulch in the work or traffic area and then place sheets of ¾ inch thick plywood or road mats with 4 inch thick layer of mulch; or (3) place 4 to 6 inches of gravel with staked geotextile fabric beneath.

(c) Soil surface removal greater than one foot shall not occur within the driplines of retained trees. No cuts shall occur within five feet of their trunks.

(d) To the extent feasible, earthen fill greater than one foot deep shall not be placed within the driplines of retained trees, and no fill shall be placed within five feet of their trunks.

(e) Underground utility line trenching shall not be placed within the driplines of retained trees. If it is absolutely necessary to install underground utilities within the driplines of preserved trees, the trench shall either be bored or drilled, but not within five feet of the trunk.

4.3-3 The proposed project could have an adverse effect on protected wetlands.

An Aquatic Resource Delineation has been prepared for the project (see Appendix C). A total of 17.43 acres of aquatic resources have been mapped and delineated within the project site (see Figure 4.3-2A-D, Aquatic Resources in Appendix C). This includes 0.997 acre of vernal pools, 3.212 acres of vernal swales, 0.211 acre of seasonal wetlands, 0.615 acre of wet meadows, 1.212 acres of seasonal swales, and 11.183 acres of drainages (including Comanche Creek). These aquatic resources are located throughout the project site, with the vernal pools and swales more common in the northwest portion of the project site. When water is present, ephemeral and intermittent drainages generally flow northeast to southwest, eventually draining into the Butte Creek Diversion Channel west of the project site or Comanche Creek south of the site.

The proposed VESP project is designed to substantially lessen the removal or degradation of natural features, including drainages. Based on the VESP Land Use Plan (see Chapter 2, Figure 2-3, Land Use Plan), permanent development areas appear to avoid most drainages on the project site, with the exception of roadways and an estimated 0.11 acre of land designated as Very Low Density Residential. Where development is proposed near drainages, Chapter 4 of the VESP requires that structures be sited in a manner that preserves natural hydrology in the area (see Section 4.4.2, Site and Structure Design). In addition, the proposed project would be implemented in accordance with the City of Chico Municipal Code Title 19 and General Plan Action OS-2.5.1, which require that development adhere to a minimum 25-foot setback from drainages. The BRCP, if adopted, would require a minimum 25-foot setback from riparian corridors or a 50-foot setback from top of bank of intermittent drainages; there are no setback requirements in the BRCP for ephemeral drainages. Aside from road and trail crossings, the VESP includes an approximately 300- to 1,000-foot setback between proposed development areas and the two intermittent drainages on the project site, including Comanche Creek. Where proposed and future roadways cross ephemeral drainages, bridge and culvert construction could impact drainages on the project site. Appendix A of the VESP requires that project-related drainage crossings rely on a biological assessment and consultation with relevant resource agencies (e.g., the ACOE, RWQCB, and CDFW) to determine the appropriate crossing type (e.g., culvert or bridge) (see Bridges, Culverts, and Creek Crossings in Section A.5.3).

Similar to drainages, the VESP includes development standards that avoid and/or substantially lessen impacts to swales and other wetland resources. Where wetlands occur within proposed roadway or trail alignments, Appendix A of the VESP recommends that boardwalks and/or bridges be constructed to avoid direct impacts to these sensitive biological areas (see Bridges, Culverts, and Creek Crossings in Section A.5.3). Based on the VESP Land Use Plan (see Chapter 2, Figure 2-3, Land Use Plan), permanent development areas appear to avoid approximately 5 acres of the approximately 6.25 acres of wetlands mapped on the project site. Although the VESP directs development away from biological resources where possible, absolute wetland avoidance may not be feasible. Impacts to drainages and wetlands (i.e., aquatic resources) as a result of project roadways and development are considered **potentially significant impacts**.

Approximately 615 acres of land containing drainages and wetlands (i.e., aquatic resources) is designated as Regional Open Space or Valley Open Space on the VESP Land Use Plan (see Chapter 2, Figure 2-3). These areas are expected to provide active and passive recreational opportunities for residents and visitors. Therefore, wetlands and drainages in these areas could be impacted by an overall increase in human activity in the area, which has the potential to spread invasive plants, damage existing wetland plants, and degrade the bed and banks of drainages. These potential impacts would be avoided and/or reduced through the appropriate drainage of trails, control of trash, pollution run-off prevention, and protective fencing to keep the public from accessing these sensitive resources. Interpretive signage would also be installed to educate trail

users on resource sensitivity (VESP Action LU-3.2 and Action PROS-6.6; also discussed in Section A.9.4, Interpretive and Education Signage, Appendix A of the VESP). For these reasons, operation and maintenance impacts to preserved aquatic resources on the project site are considered **less than significant**.

The proposed project would increase impervious surfaces and stormwater drainage within the project site when completed. If stormwater contains substantial levels of contaminants from vehicle leaks, pesticides, fertilizers, and other chemicals associated with a future development, it could degrade water quality within aquatic resources and impact the adjacent riparian community. As stated in Chapter 2, Project Description, the project is designed such that appropriately-sized basins and culverts would be used to slow water and decrease downstream runoff release rates. In addition, amended soil, bioretention cells, rain gardens, and native vegetation would be used to further reduce irrigation water use and summer irrigation demand, as well as filter out contaminants and encourage infiltration and evapotranspiration. Low-gradient water quality swales and vegetated basins with retention or detention features would also be incorporated where appropriate to process and filter runoff prior to entering natural drainages or open space on the project site. As such, **less-than-significant impacts** to aquatic resources as a result of increased impervious surfaces are anticipated.

Off-site Infrastructure

Construction of the off-site wastewater utilities would require crossing the Butte Creek Diversion Channel and Comanche Creek. All utilities would be constructed via a jack and bore method that would avoid directly impacting these water features (Appendix C). An assessment of wetlands has not been conducted for the roundabout because it is anticipated to be constructed within the existing right-of-way of Skyway. Therefore, impacts to wetlands associated with the roundabout could be considered **potentially significant.**

Mitigation Measures

With implementation of Mitigation Measure BIO-10 and the other mitigation measures listed in this section, the proposed project would reduce potential impacts to aquatic resources by ensuring protection of aquatic resources during construction and operations, and by providing compensatory mitigation for lost aquatic resources in compliance with state and federal law. Compliance with these measures would reduce potential impacts to **less than significant.**

BIO-10: **Aquatic Resources.** To mitigate for the loss of potentially jurisdictional waters of the United States and/or waters of the State, the project developer(s) shall be required to create, preserve, or restore jurisdictional waters consistent with applicable no-net-loss policies. Which can be met through compliance with Clean Water Act or Waste Discharge Requirements (WDRs), as applicable. If Section 404, 401, or WDR authorizations are required, mitigation acreage requirements shall be determined in consultation with the U.S. Army Corps of Engineers, and the Regional Water Quality Control Board. In addition, if construction activities impact California Department of Fish and Wildlife (CDFW) jurisdictional resources, the project developer(s) shall obtain, and comply with, a Lake and Streambed Alteration Agreement from CDFW.

4.3-4 The proposed project could interfere with the movement of fish or wildlife species, established migratory wildlife corridors, or the use of native wildlife nursery sites.

As noted in Section 4.3.1, Environmental Setting, wildlife corridors are linear features that connect large areas or patches of natural open space and provide avenues for the movement of animals, such as coyote and deer. Habitat linkages are small areas or patches of land that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that essentially function as 'stepping stones' for wildlife dispersal.

As stated in Section 4.3.1, the proposed project site is not located within an area that provides connectivity between similar habitat patches (refer to Figure 4.3-5, Wildlife Corridors and Habitat Linkages). The project site is generally surrounded by urban development to the north, west, and south, with the exception of expansive undeveloped land to the east. The ephemeral and intermittent drainages that bisect the project site do not provide migratory habitat for fish species due to insufficient flows in these seasonal drainages. The site does not contain open water habitat that would support waterfowl, but the site does include potential foraging habitat for waterfowl and could be used as a stopover point for non-waterfowl migratory bird species. However, ample similar open lands are available in the project vicinity and the Sacramento River to the west provides many thousands of acres of habitat for migrating birds.

Ephemeral and intermittent drainages on the project site, especially those with continuous tree canopy for protective cover, provide movement corridors for other wildlife species, such as coyote and deer. As stated above, proposed project development would be designed to avoid and/or substantially lessen impacts to drainages on the project site. However, there is a potential for bridges and culverts to be constructed within drainages. Per Section A.5.3 in Appendix A of the VESP, a biological assessment would be required for any future drainage crossings. Biological assessments for proposed bridge or culvert crossings involve an evaluation of potential biological impacts, including those related to wildlife movements/migratory corridors (Caltrans 2020). The biological impact assessment, coupled with resource permitting and related agency consultation, would help to ensure that the crossing type and construction approach would be designed to avoid and/or substantially lessen potential barriers or other impacts to wildlife movements.

As discussed in Chapter 2, Project Description, the proposed project is expected to develop incrementally, generally from west (nearest existing infrastructure) to east (toward the undeveloped foothills). Development phasing would reduce the quantity and extent of active construction sites at any one time within the 1,448-acre project site. For these reasons, project-related construction impacts to wildlife movements are considered **less than significant.**

As noted in Section 4.3.1, approximately 155 acres in the northeast portion of the project site overlaps the winter range for deer herds (Butte County 2020a). Most of this overlap is designed as Regional Open Space, with some areas of Very Low Density Residential and Low Density Residential on the VESP Land Use Plan. Deer herds in Butte County are well-adapted to small patches of natural land among urban areas (Butte County 2020b). In addition, the winter range in Butte County that is considered critical is located above 1,000 feet AMSL, which is well-above the highest elevation in the project site (i.e., 580 feet). For these reasons, project-related construction, operation, and maintenance impacts to winter deer herd migrations in Butte County are considered **less than significant.**

Human use and occupation of the project site following development could periodically inhibit daytime and nighttime movements of some wildlife species in the project area; this potential impact would be reduced by implementing development setbacks from potential movement corridors (e.g., drainages and riparian

woodlands). Also, exterior lighting could potentially impact wildlife moving through the project site at nighttime. Appendix A of the VESP contains exterior lighting guidelines that strongly encourage the use of low intensity, downward-directed lighting, which would lessen the amount of light spillage on natural areas, such as drainages and woodlands, adjacent to development. In addition, many wildlife species that occupy the area, such as coyote and deer, are well-adapted to urban settings. For these reasons, project-related operation and maintenance impacts to wildlife movement are considered **less than significant.**

Project construction, operation and maintenance of the project site, including lighting and increased site usage by humans, may result in indirect impacts to local wildlife using the project site as nursery habitat (i.e., bat maternity roosts, active bird nests) or as a migratory corridor resulting in a **potentially significant impact**. Mitigation Measures BIO-2 and BIO-5 would protect active bird nests or bat maternity roosts present during project construction and Mitigation Measure BIO-9 would require protection of trees (which provide nursery habitat) that are avoided by the project. Compliance with these measures would ensure potential impacts to native wildlife species, migratory wildlife corridors, or native wildlife nursery sites would be reduced to less than significant**.**

Off-site Infrastructure

No migratory wildlife corridors or native wildlife nursery sites were identified within the off-site wastewater survey area (Appendix C). The roundabout is within the right-of-way of Skyway and does not provide a migratory wildlife corridor or nursery site. Construction of the off-site utilities would not impact wildlife movement or any protected wildlife species and impacts are considered **less than significant.**

Mitigation Measures

See Mitigation Measures BIO-2, BIO-5 and BIO-9. Compliance with these mitigation measures would ensure impacts to native wildlife species, migratory wildlife corridors, or native wildlife nursery sites would be **less than significant**.

Cumulative Impacts

The context for evaluation of potential cumulative impacts on biological resources varies depending on the impact. For impacts to special-status species, the geographic context is the area covered by BRCP. For cumulative impacts to wetlands and riparian habitat and wildlife corridors, the geographic context is the east side of the City that includes Little Chico Creek and Butte Creek watersheds (note that Comanche Creek flows to Little Chico Creek and is therefore part of the Little Chico Creek watershed). For all cumulative impacts, the duration of impact would be permanent.

4.3-5 The proposed project could contribute to cumulative impacts to special-status plant and wildlife species.

The project's contribution to existing cumulative impacts have been analyzed in a Chico-centered regional context with other past, current and reasonably foreseeable development projects with similar biological impacts as the VESP. According to the City of Chico's Active Development Map (dated February 10, 2021, City of Chico 2021a, 2021b), the City is currently managing several development projects in close proximity to the proposed project site. Specifically, there are four development projects (hereafter referred to as 'related projects') comprising approximately 293 acres located along the eastern city limits. These related projects

include the Oak Valley Phase 1 and Meriam Park residential developments north of the project site and the recently approved Stonegate Residential Subdivision and Belvedere Heights Phase 2 developments immediately west of the project site. The proposed project and related projects are located in a relatively undeveloped area east of downtown Chico. A majority of the remaining development projects identified on the Active Development Map are surrounded by dense urban development and therefore have a lower potential to cumulatively impact biological resources. Development of the proposed project site was contemplated in the City's 2030 General Plan (September 2010) and evaluated in the General Plan EIR. The General Plan EIR includes measures to reduce the overall contribution to cumulative biological impacts resulting from build out of the City including the Doe Mill/Honey Run Special Planning Area. Conceptual land use plans for this planning area included in the General Plan EIR identify areas as primary and secondary open space as a means for protecting sensitive habitats for special-status species, including ephemeral streams and wetlands (City of Chico 2010, p. 4.10-55). The General Plan EIR concludes that individual projects complying with the General Plan would develop mitigation to offset impacts to special-status species, and relies upon this project-level mitigation to sustain its finding of less-than-significant impacts to special-status species. However, the General Plan EIR ultimately concludes that buildout of the City in combination with other reasonably foreseeable projects, would result in direct and indirect mortality and loss of habitat for special-status species, sensitive and/or critical habitat and cumulative impacts to these resources in the region would be cumulatively considerable and significant and unavoidable especially without the implementation of the BRCP, which was not finalized at the time of the General Plan EIR analysis (City of Chico 2010, p. 4.10-57).

Although implementation of the VESP would contribute to this existing cumulatively considerable significant and unavoidable impact to special-status species and their habitat, the project's cumulative contribution would be avoided or substantially lessened to the extent feasible. Large swaths of open space containing sensitive habitat, such as Comanche Creek, seasonal wetlands, woodlands, and riparian corridors, would be retained where possible and development setbacks implemented to reduce the impact to species that occupy or utilize these areas for breeding, foraging, or as movement corridors. In addition, Action OS-1.1.2 in the General Plan calls for active participation in the BRCP, which specifies project-level measures to mitigate, or off-set, impacts to biological resources (see further details in Section 4.3.2, Regulatory Setting, and below).

The BRCP, finalized in May 2019, but not yet adopted, anticipates the conversion of approximately 11,000 acres of natural habitat, including the proposed project site, to urban uses over the next 50 years. The BRCP intends to avoid or substantially lessen cumulative impacts to biological resources through the establishment of maximum permanent impact thresholds on special-status species (i.e., covered species) habitat and natural communities, as well as comprehensive measures to offset biological resource impacts resulting from development, operation, and maintenance activities (i.e., covered activities). The BRCP seeks to retain roughly 94% percent of natural or agricultural lands within the Plan Area, with the remaining 6% subject to development or other covered activities. Tables 6-5, 6-6, and 6-7 in the BRCP provide the total acreage of natural cover types or species habitat present in the BRCP Plan Area, as well as the maximum allowable acreage of each cover type or habitat that may be impacted by covered activities.

Development of the VESP would permanently convert roughly 569 acres of annual grassland, 200 acres of blue oak foothill pine woodland, and 1 acre of wetlands. Table 4.3-5 shows the total acreage of these land cover types documented in the BRCP Plan Area, their maximum allowable removal thresholds under the BRCP, and the percentage of this threshold acreage anticipated to be removed by project-related development.

Table 4.3-5. Cumulative Impacts to Vegetation Communities and Other Land Cover Type

Vegetation Community or Land Cover Type [1]	Estimated Acreage [2]			Estimated Percentage of Max. Removal Threshold
	Proposed Development Footprint	*BRCP Plan Area*	*BRCP Max. Removal Threshold*	
Vegetation Communities				
Grassland	569	68,124	7,776	7%
Blue Oak Woodland	200	34,735	3,817	5%
Valley Oak Riparian Forest	0	4,331	46	0%
Other Land Cover Types				
Vernal Pools and Other Seasonal Wetlands in Grasslands	0.5	525	60	< 1%
Rivers, Streams, Agricultural Channels	0	10,298	0	0 3

Source: Appendix C.
Notes:
1 Land cover names are derived from Table 6-7 of the BCRP.
2 BRCP acreages are for the preferred and accepted Alternative 2.
3 No permanent removal of intermittent or ephemeral drainages is anticipated (see discussion for impact 4.3-3 above). Roadways and bridges that could impact drainages would require compliance with federal and state regulations, which require no net loss of wetlands and waters.

As stated above, the proposed project would permanently convert roughly 570 acres of marginal, potential foraging habitat for Swainson's hawk, burrowing owl, bats, and other raptors and approximately 200 acres of potential habitat for nesting birds or tree roosting bats. Table 4.3-6 shows the total acreage of these species habitat types documented in the BRCP Plan Area, their maximum allowable removal thresholds, and the percentage of this cumulative acreage anticipated to be removed by project-related development. Cumulative projects in along the eastern City limits, including Oak Valley Phase 1, Meriam Park, Stonegate Residential Subdivision, and Belvedere Heights Phase 2 developments would remove an estimated 293 more acres of total potential habitat within the BRCP plan area.

Table 4.3-6. Cumulative Impacts to Special-Status Species Habitat

Habitats and Occurrences [1]	Estimated Acreage [2]			Estimated Percentage of Max. Removal Threshold
	Proposed Development Footprint	*BRCP Plan Area*	*BRCP Max. Removal Threshold*	
Burrowing Owl Nesting and Foraging Habitat	569	165,511	14,496	4%
Pallid Bat Tree Roosting Habitat	213	110,191	11,659	2%
Western Red Bat Tree Roosting Habitat	213	110,191	11,659	2%
Butte County Meadowfoam Primary Habitat	0.5	16,766	345	0%

Source: Appendix C.
Notes:
1 Land cover names are derived from Table 6-5 of the BCRP.
2 BRCP acreages are for the preferred and accepted Alternative 2.

As indicated by Tables 4.3-5 and 4.3-6, development of the VESP would not exceed any of the applicable maximum allowable removal thresholds established by the BRCP. The proposed project could be a covered activity according to the BRCP, and therefore, project compliance with the BRCP would mean that cumulative impacts to biological resources would be **less than significant**.

If future project developer(s) do not opt to seek coverage under the BRCP the project's contribution to cumulative impacts to biological resources would be cumulatively considerable resulting in a potentially significant cumulative impact. Implementation of Mitigation Measures BIO-1 through BIO-10 would avoid and or substantially lessen cumulative impacts to biological resources while maintaining general compliance with the BRCP. Compliance with the mitigation measures identified in this EIR, combined with the VESP Land Use Plan which reserves over 40% of the project site as natural open space would reduce the project's contribution to cumulative impacts to biological resources.

Mitigation Measures

See Mitigation Measures BIO-1 through BIO-10. Compliance with these mitigation measures would ensure the project's cumulative contribution to biological resource impacts would be reduced to **less than significant**.

4.3-6 The proposed project could contribute to a cumulative impact to riparian habitat or some other sensitive natural community.

The proposed VESP land use plan largely avoids riparian habitat on the project site, with exceptions for a nature trail anticipated within the Comanche Creek riparian corridor. The project's incremental impacts to riparian habitat would be very minimal and would have a very minor incremental effect upon riparian habitat. The project's contribution would not be considerable resulting in **less-than-significant contribution** to the loss of riparian habitat.

As shown in Table 4.3-5, the proposed project would not contribute significantly to the direct loss of riparian habitat. The project would avoid and minimize impacts to oak trees and/or woodlands through implementation of the VESP and compliance with Title 16, Chapter 16.66 of the City's Municipal Code (such as planting onsite, off site, or paying an in-lieu fee). Per VESP Action PROS-6.4, the Voluntary Heritage Tree Program (CMC Section 16.68) would be applied for trees within the project site that may be considered a 'Heritage Tree. Because the sensitive natural riparian corridor along Comanche Creek would mostly be avoided, the project's contribution to cumulative impacts to sensitive natural communities are considered to be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.3-7 The proposed project could contribute to a cumulative impact to protected wetlands.

The General Plan EIR does not discuss direct cumulative impacts to wetlands or other waters except indirectly through the loss or modification of special-status species habitat. According to the General Plan EIR, indirect impacts to special-status species habitat include, "*…habitat modification, increased human/wildlife interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows and general hydrology due to development of previously undeveloped areas*." (City of Chico 2010, p. 4.10-42.) Related projects in the cumulative study area would have direct impacts to protected wetlands as allowed under permits with federal and state regulatory agencies, and similar indirect impacts as the proposed

project. The General Plan EIR projected that development within the City and sphere of influence would result in impacts to 44.6 acres of wetlands, but impacts would be mitigated on a project level to achieve no net loss of wetlands and function and values of waters of the U.S. The VESP Land Use Plan (see Chapter 2, Figure 2-3) directs permanent development areas to avoid most drainages on the project site, with the exception of roadways and an estimated 0.11 acre of land designated as Very Low Density Residential. Of the 17.43 acres of wetlands and waters on the project site, the project would only directly impact approximately 1 acre. Exotic weed encroachment and changes to hydrologic conditions could directly impact wetlands and other waters resulting in a **potentially significant** contribution to impacts to protected wetlands. Implementation of Mitigation Measure BIO-10 would minimize the project's contribution to impacts on protected wetlands.

Mitigation Measures

See Mitigation Measure BIO-10. Compliance with Mitigation Measure BIO-10 would ensure impacts to wetlands would be **less than significant**.

4.3-8 The proposed project could contribute to a cumulative impact to movement of wildlife species, established migratory wildlife corridors, or the use of native wildlife nursery sites.

The City's General Plan EIR geographic area for cumulative impacts included past, future and reasonably foreseeable projects in the eastern portion of the City and City SOI. For impacts to wildlife movement, the General Plan EIR concluded that the "compact urban form and conservation provisions included in the General Plan would minimize movement and range impacts", and also concluded cumulative impacts associated with buildout would be less than significant (City of Chico 2010, p. 4.10-56). The General Plan EIR does not specifically discuss effects to native wildlife nursery sites but does mention that native species use open space areas to mate and disperse genetic material.

As noted in Impact 4.3-4, the mule deer winter range in Butte County considered critical is located in the foothills in the eastern portion of the County above 1,000 feet AMSL. Future development within the eastern portion of the City and SOI, including the project site and other related projects are proposed within that critical area. Habitat modification and fragmentation and increased human/wildlife interactions could impact wildlife movement corridors and nursery habitat in the cumulative study area, and the project would contribute to that cumulative impact. However, the proposed project is designed to avoid major wildlife corridors within riparian areas of the site, including buffer areas to minimize indirect effects. Species are expected to continue using these corridors in ways similar to existing conditions. For the portions of the riparian corridors that provide potential wildlife nursery habitat, avoidance and buffer zones are expected to also allow continued use of those habitat functions. The project's contribution would not be considerable resulting in a **less-than-significant cumulative contribution.**

Mitigation Measures

No mitigation measures are required.

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4.4 Cultural and Tribal Cultural Resources

4.4.0 Introduction

This section assesses potential effects on cultural and tribal cultural resources that could result from implementation of the Valley's Edge Specific Plan (VESP or proposed project). Cultural resources are defined as prehistoric or historic-period archaeological resources, Native American resources of cultural and religious significance, historic-period architectural resources, and historic period engineering features, including canals and railroad resources. Tribal Cultural resources (TCRs) are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, in the national or state register of historical resources, or listed in a local register of historic resources, or that the lead agency determines, in its discretion, is a tribal cultural resource. This section describes the cultural setting of the project site, discusses known resources within the project site, and also identifies the resource sensitivity of the project site.

Comments received in response to the Notice of Preparation (NOP) were raised by the public, Native American Heritage Commission (NAHC), and the Mechoopda Tribe. Comments include concerns regarding Assembly Bill (AB) 52 and Senate Bill (SB) 18 consultation methods and consistency, the historical significance of the rock walls on the project site and impacts to their stability, impacts to the wagon wheel ruts and their historical significance, as well as the Mechoopda Tribe's ancestral lands and impacts to TCRs associated with the Tribe. A copy of the NOP and comments received is included in Appendix A.

The primary sources reviewed to prepare this section include an Archeological Inventory Survey, prepared by Sean Michael Jenson, M.A., Genesis (April 25, 2018), Peer Review of Cultural Resources Inventory Report for the Valley's Edge Specific Plan, prepared by Adam Giacinto, MA, R.P.A. Archeologist (August 16, 2019), Cultural Resources Inventory Survey, Valley's Edge Off-site Infrastructure Project, prepared by Sean Michael Jensen, MA (July 4, 2020), and information provided by the City of Chico (City). The reports prepared for the project are provided in Appendix D.

4.4.1 Environmental Setting

The proposed project site is located in unincorporated Butte County adjacent to the east side of the Steve Harrison Memorial Bike Path (formerly Potter Road) and the north side of Skyway Road (Skyway), south of Little Chico Creek, immediately east of the City limits (see Figure 2-1 in Chapter 2, Project Description).

The project site is located at the interface of the northern Sacramento Valley near the lower reaches of the northern Sierra Nevada mountain range. Volcanic activity and deposits formed the topography of the area.

The Chico area was densely populated during prehistoric times due to the abundance of plant and animal resources. Vegetation of the region was dominated by foothill-woodland communities, with the presence of small meadows. Most of the land in this area has historically been used for cattle and sheep grazing, which over time has been developed with residential and urban development. The project site is undeveloped and continues to be used for seasonal grazing.

Elevation of the project site ranges from about 550-580 feet above mean sea level (amsl) at the northeast corner to about 250 feet amsl near the southwest corner. Little Chico Creek is located approximately 0.25 mile north of the of the project site, and Butte Creek, located approximately 600 feet south are the main surface water sources near the site (Genesis Society 2018).

Based upon the results of previous archeological surveys in the vicinity, the larger project area appears to be considered an area of high archaeological sensitivity for both prehistoric and historic sites and features.

Sacramento Valley Setting

The Sacramento Valley is located in the northern portion of the Central Valley that is within the Sacramento River watershed. The project site is located in the northeastern portion of the Sacramento Valley, east of the City. The Sacramento Valley is bordered by the Sierra Nevada Mountain Range to the east, the Coast Mountain Range to the West, the Siskiyou Mounting Range to the north, and the Sacramento-San Joaquin River Delta to the south.

Prehistory

The archeological record of the Sacramento Valley is complicated by a variety of factors, including those caused by geomorphic processes and others resulting from the high degree of cultural diversity that characterized much of northern California.

Early cultural gatherings were followed by an increase in Native American population density after about 7,500 years ago. One of the most securely dated of these congregations in north-central California is from the Squaw Creek Site, located north of the City of Redding. Evidence suggests extensive Native American presence around 6,500 years ago. Most of the artifactual material dating to this time period has counterparts further south, with clear evidence around Borax (Clear) Lake west-southwest of Chico, and the Farmington area in a valley setting east of Stockton. Important artifact types from this era include large wide-stemmed projectile points and manos and metates[1].

In the Northern Sacramento Valley, aboriginal populations continued to expand between 6,500 and 4,500 years ago (Genesis Society 2018). By about 2000 years ago, Macro-Penutian-speaking peoples (including the Maidu) are believed to have arrived in the area, bringing with them an economy which relied on extensive use of bulbs and other plant foods, animal and fishing products more intensively processed with mortars and pestles, and perhaps the bow and arrow and associated small stemmed- and corner-notched projectile points. Arriving ultimately from southern Oregon and the Columbia and Modoc Plateau region and proceeding down the major drainage systems (including the Feather, Yuba and American rivers), the Penutian-speaking Maidu eventually displaced Hokan populations as far west as the Sacramento Valley floor and the margins of the Sacramento River and, at the time of contact with Euro-American populations (circa. AD 1850), were still expanding into areas previously occupied by the earlier Hokan-speaking peoples (including the Yana who by this date had migrated to the north of Chico). Around Chico, the so-called Shasta (archaeological) Complex represents the material culture record of the local Penutian speakers (Appendix D).

[1] Manos and metates are terms referring to round, hand-stones and large flat stones (respectively) used for grinding grains and seeds for food preparation. Manos (coming from the Latin word *mano* meaning "hand") were typically round and smooth, and usually about the size of an adult hand. Manos were held and then ground against seeds that were laid upon a metate. Metates were either mobile, large flat but thick hard rock, or a depression on a larger rock. Similar to mortars and pestles.

Ethnography

As noted above, the Northwest Maidu, or Konkow, were resident in the Chico area at the time of Euro-American contact (circa. AD 1840s). These people occupied a portion of the Sacramento Valley floor along both sides of the Sacramento River, as well as the foothills east of Chico and Oroville near the confluence of the south, middle, north, and west branches of the Feather River, as well as the lower drainages of Big and Little Chico creeks and Butte Creek. On the basis of linguistic differences and geographical distribution, the Maidu have been divided into three primary groups: the Southern Maidu, or Nisenan; the Northeastern Maidu, or Mountain Maidu; and the Northwestern Maidu, or Konkow (Genesis Society 2018). It is this latter group which laid claim to the Chico area at the time of General John Bidwell's arrival. Chico's founder, General John Bidwell arrived in California in 1841 (Genesis Society 2018).

During the course of specialized resource exploitation, the Maidu created a wide range of archaeological site "types" in the Chico area. While only fragmentary evidence of the associated material culture remains at many of these sites, the range of such site types for this general area of Chico includes: Surface scatters of lithic artifacts and debitage[2], often but not always associated with dark brown to black "midden[3]" deposits; surface scatters of lithic artifacts and debitage without associated middens; bedrock milling stations, including both mortar holes and metate slicks; petroglyphs, especially "pitted" or "cupped" rock outcrops; trails; and isolated artifacts and flakes.

Clearly, it was not expected that all site/feature types would be present within the project area, but rather these represent the most likely "types" to be encountered if any sites were discovered at all, based on background information and the results of previous surveys within Bidwell Park and the City of Chico.

Historic Context

Early Spanish expeditions arrived in the Central Valley of California from Bay Area missions as early as 1804. By the mid-1820s, hundreds of fur trappers were annually traversing the Central Valley on behalf of the Hudson's Bay Company, some with devastating consequences for the local Maidu and other valley populations (Genesis Society 2018). By the late 1830s and early 1840s, several small permanent European American settlements had emerged in the Valley and adjacent foothill lands, including ranchos in what are now Shasta, Tehama and Butte counties. Chico's founder, General John Bidwell, eventually, of course, acquired one of these.

Bidwell arrived in California in 1841 as a member of the first band of Americans to cross the Sierra Nevada for the purpose of settlement (Genesis Society 2018). In the spring of 1843, a party of settlers headed north for Oregon from Sutter's Fort in Sacramento, which included John Bidwell, Peter Lassen and James Bruheim.

Micheltorena had made the Rancho Arroyo Chico Grant of November 7, 1844 on behalf of the Mexican government to William Dickey. Dickey settled on the north side of Big Chico Creek and later sold the ranch to John Bidwell. Bidwell managed this land grant of approximately 22,200 acres, including lands that now include Bidwell Park, for many years from his home at Arroyo del Chico. As early as 1847 he maintained experimental orchards and fields alongside extensive farming operations (Genesis Society 2018), some of which bordered Lindo Channel and other natural surface water sources in the area, including lands along Chico Creek.

[2] Debitage: Lithic debris and discards found at the sites where stone tools and weapons were made/used.

[3] A mound or deposit containing shells, animal bones, and other refuse that indicates the site of a human settlement. Often called "Kitchen midden."

In 1905, Annie Bidwell donated a tract of the most desirable land along Big Chico Creek comprising more than 1,900 acres to the City of Chico. This was the beginning of Bidwell Park. In 1911, Mrs. Bidwell gifted an additional 301 acres to the City and to the Park. Later, Mrs. Bidwell gifted an area along Lindo Channel, now held by Butte County and designated as an undeveloped park area, to the State of California. Within Mrs. Bidwell's original Park gift stood the massive Hooker Oak (California State Landmark Number 313). Named by Mrs. Bidwell in 1887 in honor of Sir Joseph Hooker, an English botanist, this immense tree was estimated in excess of 1,000 years old, a portion of which was destroyed during a storm in 1962, with the remainder eventually uprooted during a large storm in 1977.

Within the present project site, the history of land patent, ownership, acquisition and use have been documented, and help establish a context for anticipating resources that may be present within the project site.

James Thomas Stephens was born in Tennessee in 1830, and at the age of 19 was making his way to California. Along the way, Stephens met his future wife, Malinda Foster, a native of Missouri, and the two were married in Grass Valley, California, where they lived a short time before moving to Butte County. The Stephens purchased their first home in, what became known as Stone Ranch, in 1852, in an area that later became known as The Chico Seed Orchard, part of the Mendocino National Forest. The Chico Seed Orchard would achieve notoriety for the introduction of the pistachio to the United States in 1917, and the kiwi in 1934. Over the next few years, James Stephens sought employment in Colusa County as a teamster, and began raising sheep on his Stone Ranch. Over the next two and one-half decades, Stephens added stock to his flock, and began acquiring lands that comprise the current project site.

Official land ownership of the project site begins with Sam Neal's Spanish-Mexican Land Grant acquisition on April 4, 1860. Neal began selling portions of his acquisition, and on June 1, 1874, a cash sale was made for the heirs of Washington Henshaw and Jonas M. Hoyl. A few years later, on June 15, 1877, William Weaver received a lot under the Homestead Act.

On July 5, 1883, James Stephens acquired property through a cash sale of 80 acres where he ran his 1,450 head of sheep. Additional lands, which would eventually be acquired by Stephens, were first acquired by James Stilson on August 1, 1883, John C. Stanley March 15, 1884 and Simeon Moak June 30, 1885. On January 20, 1886, James Stephens acquired more land, further expanding his holdings.

James Stephens died in 1899, and bequeathed his assets to his wife Malinda, who died elven years later at the age of 76. Malinda's will passed the assets, including the present project site, to one of their eleven children, Nick Stephens (Genesis Society 2018). Nick continued ranching the land with sheep, and successfully bought and sold land throughout the Chico area. Nick's brother, Lyman Stephens, partnered with Nick on the sheep ranch for five years before purchasing the land outright on December 22, 1917. On April 12, 1943, Lyman transferred the ranch to his nephew Orville Llyod Stephens and Orville's wife, Phoebe Stephens (Genesis Society 2018). The ranch remained under the ownership of the Stephens family until 1973 when the Pacific Company of Japan purchased it. The land was ultimately sold in 2005, to the present owners.

Resources Identified within the Project Site

Within the project site there are a number of pre-historic and historic-era resources as well as archeological resources that have been identified as part of numerous surveys conducted. A summary of the resources identified is provided below with more detail included in Appendix D.

Twenty-one (21) investigations have been documented within, adjacent to, or within ¼-mile of, the project site or area of potential effect or APE. All twenty-one investigations are listed in Table 4.4-1. A summary of resources recorded within or adjacent to the project site are included below.

Table 4.4.-1. Previous Site Investigations

Northeast Information Center #	Date	Author
135	1973	Boynton
144	1975	Cross and Thorn
8117	1986	Farber
554	1981	Farber, Jensen
8143	1990	Flint
5910	2004	Harrington
6750	2005	Harrington
165	1997a	Henton
167	1977b	Henton
8146	1990a	Jensen
8147	1990b	Jensen
8148	1990c	Jensen
8130	1991a	Jensen
8130	1991b	Jensen
8135	1993	Jensen
2243	1998	Jensen
10030	2008	Kersey
8048	1979	Manning
8109	1980	Manning
7392	1978	Markley
407	1980	Offermann, Orlins

Source: Appendix D.

Five sites have been formally recorded within the APE including CA-BUT-711 (a prehistoric site described as a single boulder containing three bedrock mortars), P-04-1452 (a historic-era rock wall), P-04-3141 (historic-era hand-placed rock wall), P-04-3190 (historic-era utility pole complex), and P-04-3189 (prehistoric occupation locale comprised of two bedrock milling features).

Prehistoric

Two prehistoric sites (CA-BUT-711 and P-04-3189) had been previously identified within the project boundary. Both sites were relocated during the survey conducted as part of the project evaluation. Four new prehistoric resources were identified and recorded and are listed below as VE 1, VE 2, VE 3 and VE 4. All six sites were documented using survey-level archaeological methods with the intent of assessing if they have potential to meet requirements to be considered eligible for listing on a federal or state list of historic resources or meet the definition of an important cultural resource under CEQA (Guidelines Section 15064.5(c)). It was found that these sites may contain additional data potential pertaining to important regional research themes such as subsurface cultural deposits or midden development, possible buried features such as fire hearths, or living floors. Therefore, all six sites were assumed to meet CEQA's Criterion (4), has yielded, or may be likely to yield, information important in prehistory or history. In addition, these six sites may possibly qualify as a "unique

archaeological resource" to the extent that the sites may possess data classes of potential value in answering scientific research questions for which there is a demonstrable public interest. Lastly, these six sites also meet the National Register of Historic Places (NRHP) ("historic properties"), according to the criteria outlined in 36 CFR 60.4 and would be recommended eligible for inclusion in the National Register under Criterion D, Has yielded, or may be likely to yield, information important in prehistory or history.

CA-BUT-711 (mortars)

CA-BUT-711 was recorded by Offerman and Orlins in 1980, and described as a single bedrock boulder containing three shallow mortars. The site is situated immediately east of the Cottonwood-Elverta electrical transmission line, a short distance south of an ephemeral drainage.

P-04-3189 (milling features)

P-04-3189 was recorded by Norwood, Beck and Tilton in 2009, and consists of a prehistoric occupation locale comprised of two bedrock milling features and light density artifact scatter. This site is located in the northwestern portion of the project site.

VE 1 (prehistoric occupation)

This site consists of a prehistoric occupation locale extending approximately 300 meters in length and approximately 50 meters in width. The site contains a surface lithic scatter that varies from very light- to moderate density that is dominated by waste flakes and cores composed of locally obtained materials (basalt and metavolcanic materials observed). Also present is a sub-surface "midden" accumulation, and at least three depressions, likely representing house pits, were observed within the site boundary. One of these depressions has been subjected to contemporary disturbance.

VE 2 (prehistoric occupation)

This site consists of a prehistoric occupation extending approximately 55 meters in length and approximately 45 meters in width. The site contains a surface lithic scatter that varies from very light- to moderate-density that is dominated by waste flakes and cores composed of locally obtained materials (basalt and metavolcanic materials observed). Also present is a sub-surface "midden" accumulation, and one, shallow bedrock mortar was observed within the site boundary.

VE 3 (rock shelter)

This site consists of a small rock shelter extending approximately 8 meters in length and 2 meters in width/depth. Surface flakes and artifacts were observed within the rock shelter and on the small talus that has formed in front of the drip line, but the depth of any subsurface component was not formally determined during the present recordation as no subsurface testing was undertaken. The overall site has been subjected to minor disturbance as a result of livestock grazing.

VE 4 (prehistoric occupation)

This site consists of a prehistoric occupation locale extending approximately 800 meters in length and approximately 70 meters in width. The site contains a surface lithic scatter that varies from very light- to moderate-density that is dominated by waste flakes and cores composed of locally obtained materials (basalt and metavolcanic materials observed). Also present is a sub-surface "midden" accumulation, although no additional features were observed within the site boundary.

Historic-Era

Five historic-era sites were identified within the project site. Three historic-era sites (P-04-3141, P-04-1452 and P-04-3190) had been previously identified and recorded. Two new historic-era resources were identified and recorded as VE 5 and VE 6. All five sites were evaluated and determined to not meet the federal or state standards of a historic resource.

P-04-3141 and P-04-1452 (rock walls)

Throughout the project site are a series of hand-lain rock walls. The archeological survey conducted for the project site (Genesis April 2018) describes historic-era rock walls within the project site as follows:

> A series of hand-lain, stacked rock walls, likely constructed during the latter portion of the 19th century, which functioned as livestock barriers, enclosures and property boundaries.
>
> Some wall segments have been subjected to contemporary disturbance associated with road and utility construction, as well as ongoing vandalism. Some segments also show evidence of being abandoned and salvaged for constructing other wall segments. Among these segments are two distinct varieties. The first consists of relatively intact segments, some of which retain fence posts and wire, while the second consists of very low, dilapidated examples that appear to have been abandoned and scavenged during in an effort to add their components to other, more functional segments (p. 50, Linear Feature Record).

P-04-1452 was recorded by Jensen in 1991, and consists of an historic-era rock wall (fence) extending approximately 1.6-miles in length, and consisting of two distinct segments located in the western central portion of the site.

P-04-3141 was originally recorded by Trout in 2008, and subsequently updated by Norwood, Beck and Tilton in 2009, and consists of a hand-placed rock wall that generally trends north-south through the site. During the cultural survey this site was found to remain essentially unchanged since its original and subsequent recordation. Within the property, the wall extends approximately 8,310 feet in length.

Among these segments are two distinct varieties. The first consists of relatively intact segments, some of which retains fence posts and wire, while the second consists of very low, dilapidated examples that appear to have been abandoned and scavenged during the 19th century in an effort to add their components to other, more functional segments. In total, there are thirty-three (33) segments that have been identified within the project site, totaling approximately 17,070 linear feet (Appendix D).

While the rock walls do not qualify as a historic resource under federal or state guidelines, the walls merit special consideration, in part described in the Community Design Element of the City's 2030 General Plan which includes Policy CD 1.1 that encourages the City to recognize and protect cultural and historic resources and Action CD-1.1.1 specifically references incorporating and highlighting natural features such as rock walls in future project designs.

P-04-3190 (utility pole complex)

P-04-3190 was recorded by Norwood, Beck and Tilton in 2009, and consists of "a utility pole complex which includes at least two weathered poles devoid of wires in a northeast to southwest alignment…" This site is located in the northwestern portion of the project site.

VE 5 (Ranch Complex)

The project site includes an abandoned ranch complex on the southwestern edge of the property. Visible elements of the ranch include the foundation remains of a residence, a cottage, three barns, two cisterns, and wooden corrals/fences that were originally used for sheep ranching and livestock handling/care. The ranch complex is shown in aerial images from as early as 1912 (Appendix D). The buildings and remaining ranch elements do not embody distinctive characteristics of a particular style, type, period, or method of construction, and do not appear eligible for listing under the National Register of Historic Places (NRHP)/California Register of Historical Resources (CRHR) based on any of the evaluation criteria.

VE 6 (Doe Mill Road/wagon ruts)

This site consists of the remnants of a segment of Doe Mill Road. The road measures approximately 12 feet in width, segments of which exhibit ruts that were likely created by steel wheeled wagons. Within the project property, the site extends approximately 8,000 feet from the terminus of the paved portion of Doe Mill Road. According to local ranchers, late 19th and early 20th century ranchers supplemented their stock feed with almond hulls which were transported by wagon and distributed along the route. Thus, the function and origin of this road was for ranching purposes, likely beginning in the latter half of the 19th century.

Tribal Cultural Resources

In accordance with AB 52, a letter was sent to the Native American Heritage Commission (NAHC) requesting review of the Sacred Lands files and a list of interested Native American tribes and individuals. The NAHC provided names of eight tribes requesting notification. The Mechoopda Indian Tribe of Chico Rancheria (Tribe) was identified as having a vested interest in the project site. The City sent a letter along with a copy of the Notice of Preparation regarding AB 52 outreach to the Tribe on August 26, 2019. On September 16, 2019, the Tribe replied indicating that the project site lies within the ancestral lands of the Tribe. The project area and surrounding landscape have long been considered as having cultural, historical, and religious significance for the Tribe and the Tribe has a deep and abiding cultural and spiritual attachment to their ancestral landscape, which includes and extends beyond the Tribes formal boundaries, including the project site. Based on this the Tribe has requested to have a Mechoopda Indian Monitor be present during all earth moving and grading activities to ensure that and potential TCRs found during project ground disturbance be protected. No formal consultation was requested by the Tribe and consultation under AB 52 is considered closed.

Off-Site Infrastructure

As noted in Chapter 2, Project Description, the proposed project requires extending portions of the City's wastewater infrastructure. This includes adding new sewer lines that were identified in the City's Sanitary Sewer Master Plan Update, as shown on Figure 2-10 in Chapter 2. A cultural resources inventory survey of the proposed utility corridor was conducted for an area ranging from between 30 and 130 feet in width and extending approximately 3.5-miles in length (Appendix D). Segment A includes approximately 3,900 linear feet

of a new sewer line within the paved portion of E. 20th Street that crosses the Butte Creek Diversion Channel. Segment B includes an approximately 5,500 linear foot section of a new sewer line trenched in the shoulder of Skyway, Morrow Lane, and Cramer Lane. Segment B is mostly within paved sections of Skyway, Morrow Lane and Cramer Lane until it crosses Comanche Creek, where it would continue through oak woodland, a dirt roadway, and highly disturbed grassland. Segment C includes approximately 1,100 linear feet of a new sewer line that would mostly be located within the alignment of a historic railroad grade that has since reverted back to oak woodland and highly disturbed grassland. Segment D includes approximately 7,700 linear feet of a new sewer line that would be entirely located in the paved or disturbed portions of Entler Avenue and Midway.

No prehistoric or historic-era sites were documented within the survey area, but seven resources had been documented within the 0.25-mile search radius. A pedestrian survey resulted in the identification of one historic-era site, P-04-1446 (Butte County Railroad Grade). This abandoned segment of the Butte County Railroad was recorded, and evaluated for CRHR eligibility, and recommended not eligible under any of the evaluative criteria (Appendix D).

The project also includes a traffic roundabout located immediately adjacent to the project site within Skyway. The roundabout is proposed within the existing right-of-way of Skyway and was included in the records search conducted for the project site and no recorded resources were identified.

4.4.2 Regulatory Setting

Federal, state, and local governments have developed laws and regulations designed to protect and preserve significant cultural resources that may be affected by actions that they undertake or regulate. The National Historic Preservation Act (NHPA) and CEQA are the basic federal and state laws governing the preservation of historic, archeological, and TCRs of national, regional, state, and/or local or tribal significance within the state.

Cultural resources are defined as prehistoric or historic-period archaeological resources, Native American resources of cultural and religious significant, historic-period architectural resources, and historic-period engineering features, including canals and railroad resources. TCRs are defined as 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 or that is either 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 (PRC) 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the new resource to a California Native American tribe.

Federal Regulations

Federal regulations for cultural resources are primarily governed by Section 10 of the NHPA of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are determined eligible for listing on the NRHP. Section 106 requires agencies to take into account the effects of their undertakings on historic properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

Archaeological site evaluations assess the potential of each site to meet one or more of the criteria for NRHP eligibility based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with

the historic or prehistoric context associated with each site. The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

State Regulations

Section 7050.5 of the California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human grave. In the unlikely event that human graves are encountered, work should halt in the vicinity and the County Coroner should be notified immediately. At the same time, an archeologist should be contacted to evaluate the situation and grave. If the human remains are determined to be of Native American origin, the Coroner must contact the NAHC within 24 hours of identification.

Tribal Consultation

SB 18 Tribal Consultation; Government Code Section 65352.3 requires local governments to consult with California Native American Tribes identified by the California Native American Heritage Commission (NAHC) regarding proposed local land use planning decisions and prior to the adoption of amendment of a general plan or specific plan. The purpose of this consultation process is to preserve or mitigate impacts to cultural sites and resources.

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A TCR is either:

- On the California Register of Historical Resources or a local historic register; Eligible for the California Register of Historical Resources or a local historic register; 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 Section 5024.1.

AB 52 formalizes the lead agencies tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

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 Public Resources Code 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. (See PRC, Section 21084.1 and CEQA Guidelines, Section 15064.5, subdivisions (a) and (b).) The term embraces any resource listed in or determined to be eligible for listing in the California Register of Historic Resources (CRHR). The CRHR includes resources listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP), as well as some California State Landmarks and Points of Historical Interest.

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, Section 5024.1 and California Code of Regulations, 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 potentially eligible for the CRHR.

Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. There are seven aspects of integrity including setting, design, workmanship, materials, location, feeling and association. For historic structures, CEQA Guidelines Section 15064.5, subdivision (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 to have mitigated impacts to a less-than-significant level.

Archaeological resources can sometimes qualify as "historical resources." (CEQA Guidelines, Section 15064.5 subdivision (c)(1).)

As noted above, CEQA also requires lead agencies to consider whether projects will affect "unique archaeological resources." PRC Section 21083.2, subdivision (g), states that "'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.

(PRC, Section 21083.2, subdivision (g).)

Treatment options under 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").

Advice on procedures to identify cultural resources, evaluate their importance and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to, museums, historical commissions, associations and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

> 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.

In addition, CEQA Guidelines Section 15064.5, subdivision (e), specifies steps that should be taken whenever human remains are uncovered, beginning with the cessation of excavation activities in areas suspected of overlying remains, and contacting the county coroner to determine if the cause of death needs to be investigated. If the county coroner determines that the remains are those of Native Americans, the coroner is responsible for contacting Native American Heritage Commission (NAHC) within 24 hours. The NAHC is responsible for identifying the most likely descendent of the deceased Native American, who may then make recommendations to the landowner or individual responsible for excavation regarding the means of treating or disposing of the remains. The Guidelines also make provision for appropriate burial of the remains if the NAHC cannot identify a most likely descendent, if the identified individual fails to make recommendations, or if the recommendations are not acceptable to the landowner.

Section 15064.5(d) also 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.

Government Code Sections 65352.3, 65352.4 (also called SB 18) requires that, prior to the adoption or amendment of a general plan or specific plan, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction.

For purposes of CEQA, to determine whether cultural resources could be significantly affected, the significance of the resource itself must first be determined. Section 15065 of the CEQA Guidelines mandates a finding of significance if a project would eliminate important examples of major periods of California history or prehistory.

In addition, pursuant to Section 15064.5 of the CEQA Guidelines, a project could have a significant effect on the environment if it "may cause a substantial adverse change in the significance of an historical resource." A "substantial adverse change" means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource is impaired." Material impairment means altering "…in an adverse manner those characteristics of an historical resource that convey its historical significance and its eligibility for inclusion in the California Register of Historical Resources." Impacts to those cultural resources not determined to be significant according to the significance criteria described above are not considered significant for the purposes of CEQA.

California Register of Historic Resources

The State Historical Resources Commission has designated the CRHR or use by the 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 archeological resources. It encourages public recognition and protection of resources and determined eligibility for state historic preservation grant funding.

The former ranch complex was evaluated and it was determined that the site is not associated with events that have made significant contributions to the broad patterns of the local or regional history or the cultural heritage of California or the United States. In addition, there is no evidence that the ranching activities associated with rock walls/fences ever made significant contributions to history. The site was not recommended significant per Criterion (a) or (b)(Appendix D).

Local Regulations

City of Chico 2030 General Plan

The following City of Chico 2030 General Plan (City of Chico 2018) goals and policies from the Cultural Resources and Historic Preservation Element and the Community Design Element are applicable to cultural resources and TCRs.

Cultural Resources and Historic Preservation Element

Goal CRHP-1: Protect and preserve archeological, historical and other cultural resources to serve as significant reminders of the City's heritage and values.

Policy CRHP-1.1 (Historical Preservation Program) – Maintain and update as necessary the City's Historic Preservation Program that includes policies and regulations which protect and preserve the archeological, historical, and other cultural resources of Chico.

Action CRHP-1.1.6 (Best Management Practices) – Update the City's Best Management Practices Manual to include environmental review protocol, communication with appropriate agencies, and standard conditions of approval for discretionary projects that protect cultural and paleontological resources.

Action CRHP-1.1.7 (Public Resources) – Maintain all City-owned historic and cultural resources in a manner that is consistent with the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties.

Action CRHP-1.1.8 (Records Search) – Continue to consult and require record searches for discretionary projects with the Northeast Center of the California Historical Resources Information System (CHRIS) located as CSU Chico.

Action CRHP-1.1.9 (Native American Consultation) – Continue to consult with and distribute environmental review documents to the Native American Heritage Commission through the State Clearinghouse.

Goal CRHP-2: Reinvest in the archeological, historical and other cultural resources that frame Chico's character and identity.

Policy CRHP-2.3 (Demolition as Last Resort) – Limit the demolition of historic resources to an act of last resort, to be permitted only if: 1) rehabilitation of the resource is not feasibly; 2) demolition is necessary to protect that health, safety, and welfare of its residents; or 3) the public benefits outweigh the loss of historic resources.

Policy CRHP-2.4 (Public Awareness of Heritage Resources) – Encourage public awareness of the heritage resources that helped shape the history of Chico.

Goal CRHP-3: Engage in and facilitate preservation efforts with local preservation and cultural entities.

Policy CRHP-3.1 (Partnerships to Preserve Heritage Resources) – Foster partnerships with interested parties to preserve heritage resources.

Action CRHP-3.1.1 (Mechoopda Consultation) – Establish a Consultation Protocol and a Cultural Resources Management Plan with the Mechoopda Indian Tribe.

Action CRHP-3.1.2 (Northeast Information Center) – Maintain a Project Review Agreement with the Northeast Information Center (NEIC) and consult with the NEIC in preparation of a Cultural Resources Management Plan.

Action CRHP-3.1.3 Archeologist Consultation) – Use the California Historical Resources Information System (CHRIS) Consultants List to identify qualified archeologists for project consultation. Require consultants for City and private development projects to meet the minimum Professional Qualification Standards adopted by the Secretary of the Interior's Standards and Guidelines for Archeology and Historical Preservation. Consult with the Mechoopda Indian Tribe prior to the selection of archeologists for City projects.

Community Design Element

Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.

Policy CD 1.1 (Natural Features and Cultural Resources) — Reinforce the City's positive and distinctive image by recognizing and enhancing the natural features of the City and projecting cultural and historic resources.

Action CD1.1.1 (Highlight Features and Resources) — Incorporate and highlight natural features such as scenic vistas, creeks, and trees, as well as cultural resources such as rock walls, into project design.

Valley's Edge Specific Plan

The following goals and actions from the VESP are applicable to cultural resources and TCRs, including the onsite rock walls, and wagon wheel ruts in the old Doe Mill Road. These VESP policies and actions would direct development and future buildout of all phases of the project.

Chapter 2, Guiding Principles, Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-5: Respect & Protect Land Heritage. Avoid, protect, and provide stewardship to the land's features and resources.

> **Action PROS-5.1** — Research, identify, document and promote the history of the land, and the cultural and historically significant features and resources that are known to have existed and/or exist on the property.
>
> **Action PROS-5.2** — Ensure that no less than 90% of existing on-site rock walls are in areas designated for parks, open space, and or areas where avoidance and preservation can be monitored and managed.
>
> **Action PROS-5.3** — Provide interpretive signage at key vantage points where the prominence of rock walls can be heightened to inform visitors and residents of their local significance, and the stewardship necessary for their preservation.
>
> **Action PROS-5.4** — Incorporate rock wall elements into streetscape and landscape architecture, as specified in the VESP's Design Guidelines (Appendix A).
>
> **Action PROS-5.5** — Document the condition of preserved rock walls through annual inspection(s), and conduct any repairs and/or reinforcement utilizing native materials and original construction design.
>
> **Action PROS-5.6** — Strive to retain all surface rocks on-site, and establish a storage yard enabling residents and commercial landscapers to collect material for re-use within the plan area.
>
> **Action PROS-5.7** — Ensure that no less than 90% of the visible wagon ruts along Old Doe Mill Road are preserved, and provide interpretive signage at key trailway points along abutting bike and pedestrian trails.
>
> **Action PROS-5.8** — Ensure areas of known pre-historic cultural significance are to be left undisturbed in dedicated open space.
>
> **Action PROS-5.9** — Provide signage at key social gathering places honoring the Mechoopda Tribe's history and heritage in and around Chico and the surrounding foothills.

Chapter 3, Parks and Open Space includes the following measures designed to both highlight and protect the rock walls:

- Orienting rock walls towards the public realm;
- Creating monumentation along key vantage points where the prominence of rock walls can be highlighted to inform visitors and residence of their local significance, and the stewardship necessary for their preservation;

- Incorporating rock wall elements into streetscapes and landscape architecture;
- Documenting the condition of preserved rock walls through annual inspection and conduct necessary repairs through the use of native materials and original construction design;
- Retaining all surface rocks on-site, along with a storage yard to enable builders and residents to collect material for re-use within the VESP area.

4.4.3 Impacts and Mitigation Measures

Methods of Analysis

A formal records search was conducted for the project site, including a 0.5-mile radius, by Genesis Society through the Northeast Information Center in 2018. In July 2020, a records search was conducted for the proposed off-site infrastructure by Sean Michael Jensen, MA, which included a 0.25-mile radius (see Appendix D). Research consisted of a literature search of the following databases: NAHC Sacred Lands File, NRHP, Office of Historic Preservation (OHP), Army Corps of Engineers (ACOE), and OHP Historic Preservation District (HPD). In addition, historical maps were reviewed and a pedestrian survey of the project site, including the off-site infrastructure area, was conducted by archeologists. The pedestrian survey included both an intensive method that involved walking transects spaced from between 15 and 60 foot intervals and a general method that involved walking transects spaced from 60 to 180-foot intervals depending on proximity to recorded sites and features on the site, as detailed in Appendix D. The survey took into account the results of the background research and any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants, and other possible markers of cultural sites were noted and used to inform the potential presence of any resource (Appendix D). This research was used to identify locations of other resources that may exist or have existed within the project area, including the off-site infrastructure area.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- 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:
    i. 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
    ii. 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 new resource to a California Native American tribe.

Project Impacts

4.4-1 The proposed project could cause a substantial change in the significance of a historical resource.

As detailed in Chapter 2, Project Description, the project proposes to develop approximately 765.2 acres of the total 1,448-acre project site. Development would include residential buildings, commercial uses, community and park facilities, a future school, and roadways. Project construction would require building demolition, site clearing, grading, and trenching for utilities. These activities would disturb on-site historical resources, which hereafter are described as "historic-era built environment resources", as represented by extant rock walls, structures, and objects that are older than 45-years in age. Impacts to archaeological resources, including both historic-era archaeological resources and prehistoric archaeological resources, are addressed in Impact 4.4-2 below.

Development of the proposed project could result in the destruction or removal of historic-era resources older than 45-years in age. An evaluation of historic-era resources on the project site was conducted by Genesis Society in 2018 (see Appendix D). As noted in their report and Section 4.4.1, Environmental Setting, five historic-era built environment resources were evaluated including rock walls (P-04-1452 and P-04-3141), the ranch complex (VE 5), a segment of Doe Mill Road (VE 6) that includes wagon wheel ruts, and a utility pole complex (P-04-3190). All five resources were evaluated by a qualified architectural historian. Based on the evaluation, it was determined that none of the sites were eligible for NRHP or CRHR listing; therefore, do not meet the definition of "historical resource" under CEQA (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)).

The evaluation included the former ranch complex located in the western portion of the project site which includes a residence, a cottage, three barns, two cisterns, and wooden corrals/fences was determined to not meet the criteria to be considered NRHP or CRHR eligible. The project proposes to remove the ranch complex and its associated infrastructure including the cisterns and corrals/fencing.

According to the Cultural Report, there are a number of rock wall segments that have been identified within the project site, totaling approximately 25,380 linear feet (Appendix D, p. 15). The rock wall segments within the project site were evaluated and did not meet the criteria to be considered NRHP or CRHR eligible and do not constitute a historical resource (Appendix D). The project is proposing preservation of approximately 96% (24,000 linear feet) of these wall segments. The walls would be preserved in place following restoration or would be replaced, as needed based on project design and condition of each wall.

The remnants of a segment of Doe Mill Road that includes approximately 8,000 linear feet exhibits the presence of wagon wheel ruts. The wagon wheel ruts were associated with the ranch complex and likely the rock walls and used to feeding/managing livestock on the project site. These were also evaluated and not considered NRHP or CRHR eligible.

Although the rock walls and the segment of Doe Mill Road were determined to not be CRHR eligible, the rock walls and road segment are recognized as part of the region's vernacular and considered a community value. The 2030 General Plan includes Policy CRHP-2.4 which encourages public awareness of historic resources and Goal CD-1 that encourages future development maintain the desired form and character of the community. Policy CD 1.1 and Action CD1.1.1 also promote the recognition of natural and historic resources. To further the City's commitment to protecting cultural and historic resources, the VESP includes goals and

policies designed to preserve the rock walls and the segment of Doe Mill Road, specifically Goal PROS-5 and Actions PROS-5.1 through PROS-5.7. Action PROS-5.1 requires that the property history be researched and significant cultural and historical features be identified and documented. Action PROS-5.2 requires that no less than 90% of the existing on-site rock walls be preserved in areas designated for parks, open space, and areas where avoidance and monitoring can be managed; Action PROS-5.3 provides for interpretive signage at key vantage points to inform visitors and residents of their local significance, and the stewardship necessary for their preservation. Action PTOS-5.4 includes incorporating rock walls into streetscape and landscapes. Action PROS-5.5 requires an annual inspection of the condition of the rock wall segments, as well as repairs and/or reinforcement using native materials and original construction design and Action PROS-5.7 ensures that no less than 90% of the visible wagon ruts along Old Doe Mill Road would be preserved. The proposed project would comply with the General Plan goals and policies and the VESP policies and actions intended to protect historical resources.

Impacts to the known historic-era built environment resources would be less than significant because these resources are not NRHP or CRHR eligible and, thus, are not considered a significant historical resource under CEQA. In addition, as noted above, the proposed project is designed to minimize disturbance of historic-era resources, including the Doe Mill road segment with visible wagon wheel ruts and portions of rock walls. Therefore, impacts to historic-era resources are considered **less than significant**.

Offsite Infrastructure

An evaluation of historic-era resources on the project site was conducted for the off-site wastewater infrastructure required for the project by Sean Michael Jensen in 2020 (see Appendix D). As noted in the report and Section 4.4.1, Environmental Setting, no historic-era built environment resources were identified within the proposed utility corridor, but seven previously recorded historic-era built environment resources have been previously documented within the 0.25 mile search radius. One resource was identified during the pedestrian survey to intersect the utility corridor, consisting of the Butte County Railroad Grade (P-04-001446). This resource was noted to include an abandoned segment of the Butte County Railroad grade between Chico and Stirling City. The only attributes that remain consist of the elevated grade and an adjacent telephone line. This site was originally recorded by Huberland (1999) and recommended not significant/eligible due to wholesale disturbance (i.e., removal of rails, ties and other features), and thus a substantial loss of integrity. The eligibility of this site was re-evaluated by a qualified historian and based on the evaluation it was determined that the site was not eligible for NRHP or CRHR listing and does not meet the definition of “historical resource” under CEQA (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)). Thus, because there are no historic-era resources identified the impact is **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.4-2 The proposed project could cause a substantial adverse change in the significance of an archaeological resource.

A total of six prehistoric archeological resources and no historic-era archaeological resources were identified within the project site through records searches and the survey conducted by Genesis Society (see Appendix D). All six prehistoric sites were recommended to contain additional research potential, and recommended NRHP and CRHR eligible. These sites, which include CA-BUT-771, CA-BUT-3189, VE 1, VE 2, VE 3, and VE 4 (Appendix D, p. 22), would be avoided and preserved in place by the project, as designed.

Development of the proposed project would include ground-disturbing activities to construct residential areas, mixed-use and commercial uses, public facilities, park/recreation areas, roads, and a potential future school site. Construction activities, while avoiding known resources, could result in damaging or destroying unknown archeological resources. Archaeological resources are often difficult to identify from surface evidence alone and may contain buried cultural deposits in areas with appropriate soils. Such subsurface deposits are most likely to be exposed within three feet of the surface during activities requiring grading and other ground preparation. Additionally, recreation areas, such as paths and trails introduce access by higher frequencies of people to areas where unknown archaeological resources may be present, thereby elevating the potential for resources to be identified and disturbed by the public that may have been missed during an archaeological survey.

While known prehistoric archeological resources would be avoided by the project, the presence of such resources in the vicinity suggests that the project has an elevated potential to unearth unknown resources resulting in a substantial adverse change in the significance of the resource. In addition, as a result of historical use by ranching activities there is a potential to unearth and adversely affect the significance of unanticipated historic-era archaeological resources. The loss of and/or substantial damage to undiscovered historic-era or prehistoric archaeological resources is considered a **potentially significant impact**.

Off-Site Infrastructure

Construction of the off-site infrastructure would require trenching and excavation that could unearth an unknown archeological resource. No archeological sites were documented within the survey area of the proposed wastewater infrastructure, but seven resources had been documented within the 0.25-mile search radius. As discussed above, given certain conditions subsurface cultural deposits have the potential to be present where there are little or no surface indications of an archaeological site. No known resources were identified specific to the proposed roundabout; however, there is the potential to damage or disturb a significant undiscovered subsurface archaeological resource during construction of this project element which is considered a **potentially significant impact**.

Mitigation Measures

Mitigation measures have been developed in order to ensure that potential impacts to historic-era and prehistoric cultural resources are appropriately managed. Through implementation of Mitigation Measures CUL-1 and CUL-2, which requires preparation and implementation of a cultural resources management and unanticipated discovery plan, impacts to known and unknown cultural resources would be reduced to less than significant. Monitoring strategies and discovery procedures addressed in this plan would take into consideration the most current development footprint and methods, review them against the distribution of known resources, and assess potential of areas within the project that may be of elevated sensitivity for containing unanticipated resources.

CUL-1: **Management of Known and Unanticipated Archaeological Resources.** Prior to initiation of each phase of project construction, the project developer(s) shall hire a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards (SOI-Qualified Archaeologist), to prepare a Cultural Resources Management and Unanticipated Discovery Plan (Management and Discovery Plan) that includes steps to effectively preserve known resources that are planned for avoidance and to appropriately manage potential impacts to

unanticipated resources that may be encountered during excavation activities. The Plan shall be subject to review and approval by City planning staff. At a minimum, the Plan shall include the following for archaeological resources:

- Archaeological monitoring zones, and requirements for permitting access to areas under active construction by a qualified archaeologist and designated Native American monitor;
- Requirements for establishing and maintaining environmentally sensitive area (ESA) boundaries around known resources, as appropriate;
- Actions to be taken, should any unanticipated archaeological resources be discovered during project construction. The Plan shall outline specific protocols to minimize adverse effects associated with: (1) treatment of previously unidentified features, site components, or sites; and (2) treatment of human remains and/or cultural objects;
- Daily log preparation;
- Agency communication requirements; and
- Final monitoring report preparation.

Prior to commencement of construction activities, the construction contractor and construction personnel shall attend and complete a Workers Environmental Awareness Program (WEAP) training conducted by a Secretary of the Interior qualified archeologist. The WEAP training shall provide: (1) the types and characteristics of archaeological materials that may be identified (unearthed) during construction and explain the importance of and legal basis for the protection of cultural resources; (2) proper procedures to follow in the event that cultural resources, tribal cultural resources, or human remains are uncovered during ground-disturbing activities, including procedures for work curtailment or redirection; and (3) protocols for contacting the on-site construction supervisor and project archaeologist upon discovery of a resource.

CUL-2: **Archaeological and Native American Monitoring.** As outlined under the Management and Discovery Plan required by Mitigation Measure CUL-1, prior to any ground disturbance the project developer(s) shall ensure than a Secretary of the Interior qualified archaeologist is present to monitor earthmoving activities within archaeological monitoring zones, at the discretion of the qualified archaeologist. If any archaeological, paleontological, or historic deposits are identified during activities, ground-disturbing construction in that area shall cease, and a determination of resource significance made. Significant resource sites shall be subject to appropriate measures (e.g. data recovery, impact avoidance, recordation).

Prior to the start of grading operations for each project phase the project developer or their representative shall provide reasonable notice and site access to the Mechoopda Indian Tribe of Chico Rancheria (Tribe) for a tribal monitor to be present during ground disturbing activities with the potential to encounter cultural resources of Native American origin or association, as outlined by the Monitoring and Discovery Plan. If archaeological resources (i.e., sites, features, or artifacts) are exposed during construction activities, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, in coordination with the tribal monitor if prehistoric in nature, can evaluate the significance of the find and determine whether or not additional study is warranted. At the discretion of the archaeologist, temporary

flagging or staking may be required around the resource to avoid any disturbance from construction equipment. The work exclusion buffer may be adjusted based on the recommendation of the archaeologist. The feasibility of avoidance and preservation in place of any identified cultural resource shall be evaluated prior to considering other management strategies that may be implemented. Depending upon the nature of the find, the archaeologist and tribal monitor (if a resource is prehistoric in age) may simply record the find to appropriate standards (thereby addressing any data potential) and allow work to continue.

If the archaeologist determines the discovery to be potentially significant under CEQA or the tribal monitor identifies a potential Tribal Cultural Resource (TCR), additional efforts such as preparation of a treatment plan, testing, and/or data recovery may be warranted prior to allowing construction to proceed in this area. Management strategies specific to TCRs and related government-to-government consultation shall be outlined independently in the Management and Discovery Plan. All management strategies recommended by the archaeologist and/or Tribe must be approved by the City of Chico Community Development Director. The developer shall then adhere to the management strategies approved by the City. Ground-disturbing activities may resume once the management strategies have been implemented to the satisfaction of the City's Community Development Director and the qualified archaeologist.

4.4-3 The proposed project could potentially damage human remains during construction activities.

Development of the proposed project could result in the destruction, damage, or discovery of human remains on the project site during site disturbing construction activities, particularly site clearing, grading, trenching and excavation. As stated above, the area has been used both historically and during prehistoric times by Native American inhabitants as well as early settlers to the area. Human remains were not discovered during the site survey and a search of the NAHC Sacred Land Files failed to identify any known onsite resources. Nonetheless, given the prior use of the site it is considered sensitive for the presence of human remains, including those interred outside of formal cemeteries. Therefore, there is the potential project construction could have the potential to encounter human remains.

Section 7050.5(b) of the California Health and Safety code specifies protocol to follow in the event human remains are discovered. In addition, CEQA Guidelines Section 15064.5(e), specifies steps that should be taken whenever human remains are uncovered, beginning with the cessation of excavation activities in areas suspected of overlying remains, and contacting the county coroner to determine if the cause of death needs to be investigated. If the county coroner determines that the remains are those of Native Americans, the coroner is responsible for contacting Native American Heritage Commission (NAHC) within 24 hours. The NAHC is responsible for identifying the most likely descendent of the deceased Native American, who may then make recommendations to the landowner or individual responsible for excavation regarding the means of treating or disposing of the remains. The Guidelines also make provision for appropriate burial of the remains if the NAHC cannot identify a most likely descendent, if the identified individual fails to make recommendations, or if the recommendations are not acceptable to the landowner.

The proposed project would Section 7050.5 of the California Health and Safety Code as well as CEQA Guidelines Section 15064.5; however, since ground-disturbing construction activities have the potential to uncover and potentially impact previously unrecorded human remains, this impact would be considered **potentially significant**.

Mitigation Measures

Management strategies have been developed with the intent of responding to the inadvertent discovery of human remains and to ensure compliance with applicable regulations and codes. Mitigation Measure CUL-3 requires that project activities in the vicinity of any possible human remains be halted and the County coroner be notified in the event human remains are discovered. The coroner would then identify if the remains are human and, if so, whether they are Native American in origin. If potential human remains are Native American, landowner coordination with the Tribe would be required in order to determine the appropriate course of action and methods for respectful treatment. With these measures implemented, impacts to human remains would be reduced to **less than significant.**

CUL-3: **Human Remains.** If human remains are discovered at any project construction site(s) during any phase of construction, all ground-disturbing activity within 100 feet of the remains shall be halted immediately, and the City of Chico (City) and the Butte County coroner shall be notified immediately. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The developer shall also retain a Secretary of the Interior qualified archaeologist with Native American burial experience to conduct a field investigation of the area, if required, and facilitate communication between the land owner and the Most Likely Descendant, if any, identified by the NAHC. As necessary, the archeologist may provide professional assistance to the Most Likely Descendant, including the excavation and removal of the human remains. The City shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98. The project developer shall implement approved mitigation, to be verified by the City, before the resumption of ground-disturbing activities within 100 feet of the boundaries of the sensitive area defined by the investigation where the remains were discovered.

If the archaeologist determines that some or all of the affected property qualifies as a Native American Cultural Place, including a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code section 5097.9) or a Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Public Resources Code Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code Section 5097.993), the archaeologist shall recommend to the City potentially feasible mitigation measures that would preserve the integrity of the site or minimize impacts to it, including any or a combination of the following:

- Avoidance, preservation, and/or enhancement of all or a portion of the Native American Cultural Place as open space or habitat, with a conservation easement dedicated to the most interested and appropriate tribal organization, if such an organization is willing to accept and maintain such an easement, or alternatively, a cultural resource organization that holds conservation easements;
- An agreement with any such tribal or cultural resource organization to maintain the confidentiality of the location of the site so as to minimize the danger of vandalism to the site or other damage to its integrity; or
- Other measures, short of full or partial avoidance or preservation, intended to minimize impacts to the Native American Cultural Place consistent with land use assumptions and the proposed design and footprint of the development project for which the requested grading permit has been approved.

After receiving such recommendations, the City shall assess the feasibility of the recommendations and impose the most protective mitigation feasible in light of land use assumptions and the proposed design and footprint of the development. In reaching conclusions with respect to these recommendations, the City shall consult with both the project developer and the most interested and appropriate tribal organization.

4.4-4 The proposed project could cause an adverse change in the significance of a tribal cultural resource.

Development of the proposed project could cause substantial adverse changes in the significance of a TCR (site, feature, place, cultural landscape, sacred place, or object) with cultural value to a California Native American tribe. The project site has been used both historically and during prehistoric times by Native American inhabitants. Because the prior use of the project site, it is likely that TCRs could be present and may be disturbed during construction activities.

A review of the NAHC Sacred Lands File was conducted as part of the cultural survey conducted for the project and the search "failed to indicate the presence of Native American cultural resources in the immediate project area" (see Appendix D). On February 12, 2018, letters were sent to 8 tribes provided by the NAHC that may have knowledge of cultural resources in or near the project area. No responses were received from the contacted parties. Follow up phone calls were made and only the Mechoopda Indian Tribe responded indicating the project's proximity to known ethnographic villages, and to the property's cultural sensitivity (Appendix D).

The proposed project is subject to compliance with SB 18 and AB 52 to ensure that consultation with tribes is conducted and tribes are allowed the opportunity to provide comments, monitor, and preserve TCRs if found during construction. No tribes submitted a request to be notified under AB 52; however, the City sent a notification letter to the Mechoopda Indian Tribe of Chico Rancheria (Tribe) requesting input or consultation regarding the potential for TCRs to be present. On September 16, 2019, the Tribe replied that the project site lies within the ancestral lands of the Tribe and the project site and surrounding landscape have long been considered as having cultural, historical, and religious significance for the Tribe. In addition, based on recordings in the area and Tribal knowledge the site has a high sensitivity for TCRs to be present. The Tribe requested to have a Mechoopda Indian Monitor be present during all earth moving and grading activities to ensure that any potential TCRs found during project ground disturbance be protected. The City also complied with SB 18 and received a list of interested tribes from the NAHC who have requested consultation for the purpose of preserving or mitigating impacts to cultural places located on land affected by the proposed project. The City reached out to these tribes and received a response from the Mechoopda Indian Tribe of Chico Rancheria. The Tribe did not request consultation with the City. Compliance with the notification and outreach required under AB 52 and SB 18 is complete.

Based on information provided by the Tribe, no known TCRs have been identified that would be impacted by the proposed project, although the area is considered to have the potential to contain unanticipated TCRs. Therefore, since ground-disturbing construction activities have the potential to potentially impact TCRs, this impact would be considered **potentially significant**.

Mitigation Measures

While no TCRs have been identified that may be affected by the project, the following approach for the inadvertent discovery of TCRs would be integrated within the Management and Discovery Plan required by Mitigation Measure CUL-1 to ensure there are no impacts to unanticipated resources. With this mitigation implemented, the potential for impacts to TCRs would be **less than significant**.

CUL-4: **Unanticipated Discovery of a Tribal Cultural Resource.** Mitigation Measures CUL-1 and CUL-2 require developing and implementing management strategies to be implemented in the event an unanticipated tribal cultural resource (TCR) is identified. These strategies shall include the following, at a minimum:

The Management and Discovery Plan to be implemented as part of Mitigation Measure CUL-1 which requires the following: In the event a potential TCR is encountered during construction, all construction activities within 100 feet of the find shall be halted and the City Community Development Director notified. The City shall then immediately notify the Native American Heritage Commission and the Mechoopda Indian Tribe of Chico Rancheria (Tribe). If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in the Management and Discovery Plan. If the City determines that the potential resource appears to be a tribal cultural resource (as defined by PRC Section 21074), the Tribe or any other affected Native American Indian tribe would be provided a reasonable period of time to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered tribal cultural resources. Depending on the nature of the potential resource and tribal recommendations, review by a qualified Secretary of the Interior archaeologist may be required, as determined by the City. Implementation of proposed recommendations shall be made based on the determination of the City that the approach is reasonable and feasible. All activities shall be conducted in accordance with regulatory requirements.

Cumulative Impacts

The cumulative context for TCRs, historical built environment resources, archeological resources, and human remains analysis includes Butte County and the northern Sacramento Valley region as a whole. These resource types all represent locations of specific use of the environment and landscape. For cultural resources, this use is primarily associated with the record of past activity. Whereas, for TCRs, such locations represent a continuity of use that is assigned traditional value by tribes, both in the past and present. The cumulative impact to these non-renewable resources are generally considered in terms of their cultural and/or informational value based on their resource type, context and relationships to the surrounding landscape and/or tribal histories. With regard to cultural resources (including historical built environment and archaeological resources), the importance of this type of information is revealed through review of the larger historical and archaeological record which, in turn, is dependent on the contribution of shared data resulting from technical investigations. Tribal cultural resources, as well as human remains of Native American origin, while also variable in type, use, and location, are individually identified and assigned value by California Native American tribes.

Cumulative impacts on TCRs, historical built environment resources, archeological resources, and human remains consider whether impacts of the proposed project together with other projects in the larger region, when taken as a whole, substantially diminish the number of such resources within the same or similar context or type.

4.4-5 The proposed project could have a cumulative impact on historic-era built environment resources, archeological resources, as well as human remains and tribal cultural resources.

As discussed in previously, the proposed project as presently designed would not directly impact any CRHR-eligible historic-era cultural resources or any known prehistoric cultural resources. No TCRs or human remains have been identified within the project area. Ranching complexes and features, as well as other similar historic-era resources, remain relatively common in the region. However, urban development in Butte County and the northern Sacramento Valley region as a whole has resulted in the loss and alteration of significant cultural resources, and it is reasonable to assume that past, present and future development activities would continue to damage and/or destroy significant cultural resources and TCRs. Given past, present and future development in the County and the larger Sacramento Valley and because all significant cultural resources are unique and non-renewable, all adverse effects or negative impacts contribute to a dwindling resource base, this is considered a significant cumulative impact.

As discussed in the regulatory setting, numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect cultural resources including TCRs. Future projects within the region would also be subject to the same requirements as the proposed project. Technical studies and consultation would be required as part of the due diligence process and would result in the documentation and appropriate consideration of any resources that may be present. Regulations in the region for management of TCRs and cultural resources would apply to development within and outside the City. In addition, development within the City is subject to the City's 2030 General Plan, which provides policies and actions that safeguard cultural resources from unnecessary impacts. These include General Plan Action CHRP-1.1.6, which requires that future development projects must include best management practices that protect cultural and historic resources as a condition of approval, and Policy CRHP-2.3 which limits the demolition of historic resources as a last resort. The City's 2030 General Plan Update EIR determined that implementation of the General Plan Update, which included future annexation and development of the project site, would result in a less than cumulatively considerable contribution to impacts to cultural resources, including human remains, due to implementation of General Plan policies and actions.

Although unlikely, there is the potential the proposed project could adversely affect significant cultural resources, including prehistoric and archaeological resources, TCRs that are unique and non-renewable members of finite classes if discovered during construction. In addition, due to the size of the project site it is reasonable to assume the project's incremental contribution to the cumulative loss of cultural resources is considerable resulting in a **potentially significant cumulative impact**. Implementation of project level Mitigation Measures CUL-1 through CUL-4 would address potential impacts to TCRs, historic, and pre-historic archeological resources, and human remains. Mitigation Measures CUL-1, CUL-2, and CUL-4 require preparation and implementation of a Management and Discovery plan that would serve to guide the identification, evaluation, and management strategies for TCRs, historic-era built environment resources, and archaeological resources. While no known human remains are documented within the project site the inadvertent discovery of human remains shall also be addressed within the Management and Discovery Plan, regulatory requirements for treatment of human remains are stipulated within Mitigation Measure CUL-3.

Mitigation Measures

See Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4. Compliance with these mitigation measures would ensure cumulative impacts to historic, and pre-historic archeological resources, and human remains would be reduced to **less than significant**.

4.4.4 References

Genesis Society 2018. Archeological Inventory Survey: Valley's Edge Development Project circa 1,440-acres, Butte County, California. Prepared for Chico Land Investments, LLC. Sean Michael Jensen, M.A.. April 25, 2018.

Butte County 2012. Butte County 2030 General Plan. Adopted October 26, 2010 and Amended on November 6, 2012. Available online at: https://www.buttecounty.net/dds/Planning/Butte-County-General-Plan.

City of Chico. 2017. Chico 2030 General Plan. Adopted April 2011, Amended March 2017.

City of Chico 2020. Valley's Edge Specific Plan. March 2020.

Public Resources Code, section 5024.1 and California Code of Regulations, Title 14, section 4850. Available online at: https://codes.findlaw.com/ca/public-resources-code/prc-sect-5024-1.html.

4.5 Energy

4.5.0 Introduction

This section describes the energy conditions of the proposed Valley's Edge Specific Plan (proposed project or VESP), and identifies associated regulatory requirements, and evaluates potential impacts of the proposed project with respect to potential for wasteful, inefficient or unnecessary use of energy associated with construction and operation.

Comments received in response to the Notice of Preparation (NOP) from the public include concerns regarding the transportation and energy requirements for the proposed project. Section 4.13, Transportation and Circulation addresses the project's increase in vehicle trips and amount of vehicle miles traveled. A copy of the NOP and comments received is included in Appendix A.

The primary sources reviewed to prepare this section include the 2017 update to the City of Chico 2030 General Plan, the 2019 California Building Standards Code, and information from the City of Chico (City).

4.5.1 Environmental Setting

Electricity

In 2018, California's estimated electricity usage was approximately 255,350 gigawatt hours of electricity (EIA 2019a). Electricity usage in the State of California (state) varies substantially by the types of uses in a building, types of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, while the national average has steadily increased (CEC 2018a).

Butte County and the City of Chico receive electricity from Pacific Gas & Electric Company (PG&E). Notably, in November 2019, Butte County Board of Supervisors and the Chico City Council entered into a Joint Powers Authority agreement, creating Butte Choice Energy (BCE) Authority. Service is expected to start in 2021, however, specific information regarding BCE is currently unavailable. PG&E provides electric services to 5.4 million customers, including 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines over a 70,000-square-mile service area that includes in Northern California and central California (PG&E 2016). As presented in Table 4.5-1, according to PG&E, customers consumed 79,776 million kilowatt-hours (kWh) of electricity in 2018 (CEC 2019a).

Table 4.5-1. Pacific Gas & Electric Company 2018 Electricity Consumption

Sector	Total Electricity (in millions of kWh)
Agricultural and Water Pump	5,831.54
Commercial Buildings	30,148.36
Commercial Other	4,265.60
Industry	10,518.62
Mining and Construction	1,593.65

Table 4.5-1. Pacific Gas & Electric Company 2018 Electricity Consumption

Sector	Total Electricity (in millions of kWh)
Residential	27,700.32
Streetlight	310.59
Total Consumption	**80,368.67**

Source: CEC 2019a.
Notes: kWh = kilowatt-hour.

PG&E receives electric power from a variety of sources. According to California Public Utilities Commission's (CPUC's) *2018 Renewable Portfolio Standard (RPS) Annual Report to the Legislature*, 39% of PG&E's power came from eligible renewable energy sources in 2018, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (PG&E 2019).

Based on recent energy supply and demand projections in California, statewide annual peak electricity demand is projected to grow an average of 890 megawatts per year for the next decade, or 1.4% annually, and consumption per capita is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2018a).

In Butte County, PG&E reported an annual electrical consumption of approximately 1,479.21 million kWh in 2018, with 722.51 million kWh for non-residential uses and 756.70 million kWh for residential uses (CEC 2019b).

Natural Gas

In 2018, California's estimated natural gas usage was approximately 2,136,907 million cubic feet (MMcf) (EIA 2019b). PG&E provides natural gas service to most of Northern California, including Butte County. As provided in Table 4.5-2, PG&E customers consumed approximately 4,794 million therms of natural gas, in 2018 (CEC 2019c).

Table 4.5-2. Pacific Gas & Electric Company 2018 Natural Gas Consumption

Sector	Total Natural Gas (in millions of therms)
Agricultural and Water Pump	37.24
Commercial Buildings	899.08
Commercial Other	59.02
Industry	1,776.01
Mining and Construction	190.22
Residential	1,832.78
Total Consumption	**4,794.35**

Source: CEC 2019c.

Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 32% of the natural gas delivered by California utilities (CPUC 2019). Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70% of the natural gas delivered by California utilities in 2017 (EIA 2019b).

Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy efficiency programs, and the availability of alternative renewable energy sources. As previously indicated, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available through existing delivery systems, thereby increasing the availability and reliability of resources.

CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. The CPUC regulates natural gas utility service for approximately 11 million customers who receive natural gas from PG&E, Southern California Gas, San Diego Gas & Electric, Southwest Gas, and several smaller natural gas utilities. Most of the natural gas used in California comes from out-of-state natural gas basins (CPUC 2019).

In 2017, California customers received 38% of their natural gas supply from basins located in the Southwest, 27% from Canada, 27% from the Rocky Mountains, and 8% from basins located within California (CPUC 2019). Natural gas from out-of-state production basins is delivered into the state through the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, Ruby Pipeline, Southern Trails Pipeline, and Mojave Pipeline. The North Baja–Baja Norte Pipeline takes gas off the El Paso Pipeline at the California/Arizona border and delivers it through California into Mexico. The Federal Energy Regulatory Commission regulates the transportation of natural gas on interstate pipelines, and CPUC often participates in Federal Energy Regulatory Commission regulatory proceedings to represent the interests of California natural gas consumers (CPUC 2019).

Most of the natural gas transported through interstate pipelines, as well as some California-produced natural gas, is delivered through the PG&E and Southern California Gas intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" natural gas pipeline system). CPUC has regulatory jurisdiction over 100,000 miles of utility-owned natural gas pipelines and thousands more miles of service lines (CPUC 2019).

PG&E and Southern California Gas own and operate several natural gas storage fields located in Northern and Southern California. These storage fields and four independently owned storage utilities—Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage—help meet peak-season natural gas demands and allow California natural gas customers to secure natural gas supplies more efficiently (CPUC 2019).

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers and/or marketers (CPUC 2019). In 2018 (the most recent year for which data is available), PG&E had delivered 41.98 millions of therms to Butte County, with the majority going to residential uses (24.99 million therms) (CEC 2019d).

Petroleum

There are more than 35 million registered vehicles in California, and those vehicles consume an estimated 17 billion gallons of fuel each year (CEC 2019e; DMV 2019). Petroleum currently accounts for approximately 92% of California's transportation energy consumption (CEC 2019e). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted

to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and greenhouse gas (GHG) emissions, and reduce vehicle miles traveled. Market forces have driven the price of petroleum products steadily upward over time, and technological advances have made use of other energy resources or alternative transportation modes increasingly feasible.

Largely as a result of and in response to these multiple factors, gasoline consumption within the state has declined in recent years, and availability of other alternative fuels/energy sources has increased. The quantity, availability, and reliability of transportation energy resources have increased in recent years, and this trend may likely continue and accelerate (CEC 2019e). Increasingly available and diversified transportation energy resources act to promote continuing reliable and affordable means to support vehicular transportation within the state.

4.5.2 Regulatory Setting

Federal Regulations

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998. The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act (EISA) of 2007 was signed into law. In addition to setting more stringent Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation (the RFS) requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2013, 2015). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in GHG emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- Expands the RFS program to include diesel, in addition to gasoline.
- Increases the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- Establishes new categories of renewable fuel, and sets separate volume requirements for each one.
- Requires the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State Regulations

Senate Bills 1078 (2002), 107 (2006), X1-2 (2011), 350 (2015) and 100 (2018)

Senate Bill (SB) 1078 established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the RPS requirements described above. The proposed project's reliance on non-renewable energy sources would be reduced accordingly. Senate Bills 107, X1-2, 350, and 100

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030.

Assembly Bill 1007

Assembly Bill (AB) 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with the other state, federal, and local agencies. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 and Senate Bill 32

In 2006, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. Additional information on AB 32 and SB 32 is provided in Section 4.7, Greenhouse Gases, of this EIR.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The current Title 24 standards are the 2019 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy (due to energy efficiency measures) than those built to the 2016 standards; if rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018b). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

Title 24 also includes Part 11, California's Green Building Standards (CALGreen). CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, high-rise residential, state-owned buildings, schools, and hospitals, as well as certain residential and non-residential additions and alterations. The CALGreen 2019 standards have improved upon the previous 2016 CALGreen standards and went into effect on January 1, 2020. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.
- 65% of construction and demolition waste must be diverted from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Inclusion of electric vehicle (EV) charging stations or designated spaces capable of supporting future charging stations.
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

State Vehicle Standards

In a response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. Additional information on the state vehicle standards is provided in Section 4.7, Greenhouse Gases, of this EIR.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also a part of a bigger effort to address other development issues within the general vicinity, including transit and vehicle miles traveled, which influence the consumption of petroleum-based fuels. Additional information on the Sustainable Communities Strategy is provided in Section 4.7, Greenhouse Gases, of this EIR.

Local Regulations

City of Chico 2030 General Plan

The City of Chico 2030 General Plan (City of Chico 2017) includes various goals, policies, and actions related to sustainability and energy conservation. Applicable goals, policies, and actions include the following:

Sustainability Element

Goal SUS-5: Increase energy efficiency and reduce non-renewable energy and resource consumption Citywide.

> **Policy SUS-5.2 (Energy Efficient Design)** - Support the inclusion of energy efficient design and renewable energy technologies in public and private projects.
>
> > **Action SUS-5.2.1 (Integration of Energy Efficiency Technology) –** Utilize City incentives identified in Action LU-2.3.1 to encourage the integration of energy efficiency measures and renewable energy devices, in addition to those required by the state, during early project review.

Circulation Element

Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.

> **Policy CIRC-1.2 (Project-level Circulation Improvements)** - Require new development to finance and construct internal and adjacent roadway circulation improvements as necessary to mitigate project impacts, including roadway, transit, pedestrian, and bicycle facilities.

Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.

Policy CIRC-2.1 (Complete Streets Standards) - Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and GHG emissions; and reinforces the role of the street as a public space that unites the City.

Action CIRC-2.1.1 (Complete Streets Standards) - With consideration of street classification and function, design new streets to accommodate all modes of travel, including transit, bicycles, pedestrians, vehicles and parking.

Action CIRC-2.1.3 (Multimodal Connections) - Provide connections between and within existing and new neighborhoods for bicycles, pedestrians, and automobiles.

Policy CIRC-2.2 (Circulation Connectivity and Efficiency) - Provide greater street connectivity and efficiency for all transportation modes.

Action CIRC-2.2.1 (Connectivity in Project Review) - New development shall include the following internal circulation features:

- A grid or modified grid-based primary street system. Cul-de-sacs are discouraged, but may be approved in situations where difficult site planning issues, such as odd lot size, topography, or physical constraints exist or where their use results in a more efficient use of land, however in all cases the overall grid pattern of streets should be maintained;
- Traffic-calming measures, where appropriate;
- Roundabouts as alternative intersection controls, where appropriate;
- Bicycle and pedestrian connections to adjacent streets, trails, public-spaces, and bicycle paths; and
- Short block lengths consistent with City design standards.

Action CIRC-2.2.2 (Traffic Management) - Perform routine, ongoing evaluation of the street traffic control system, with emphasis on traffic management, such as signal timing and coordination or the use of roundabouts, to optimize traffic flow along arterial corridors and reduce vehicle emissions.

Goal CIRC-3 - Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.

Policy CIRC-3.3 (New Development and Bikeway Connections) - Ensure that new residential and non-residential development projects provide connections to the nearest bikeways.

Action CIRC-3.3.1 (Bikeway Requirements) - Require pedestrian and bicycle connections to the Citywide bikeway system every 500 feet, where feasible, as part of project approval and as identified in the Bicycle Master Plan.

Goal CIRC-4 - Design a safe, convenient, and integrated pedestrian system that promotes walking.

Policy CIRC-4.1 (Pedestrian Master Planning) - Continue to integrate and highlight pedestrian access and dual use bicycle and pedestrian pathways in the Bicycle Master Plan.

Policy CIRC-4.2 (Continuous Network) - Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.

Policy CIRC-4.3 (Pedestrian-Friendly Streets) - Ensure that streets in areas with high levels of pedestrian activity, such as near schools, employment centers, residential areas, and mixed-use areas, support safe pedestrian travel by providing elements such as detached sidewalks, bulb-outs, on-street parking, enhanced pedestrian crossings, and medians.

Action CIRC-4.3.1 (Safe Pedestrian Crossings) – As funding allows, improve pedestrian safety at intersections and other crossing locations by providing safe, well-marked pedestrian crossings, bulb-outs, on-street parking, audible warnings, or median refuges that reduce crossing widths.

Action CIRC-4.3.2 (Expand Sidewalk Infrastructure) – As funding allows, continue installation of sidewalk and pedestrian-related infrastructure in areas not currently served.

Goal CIRC-5 - Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.

Policy CIRC-5.3 (Transit Connectivity in Projects) - -Ensure that new development supports public transit.

Action CIRC-5.3.1 (Roadway Transit Facilities) - When planning or retrofitting roadways, consult with BCAG regarding the inclusion of transit stops, shelters, bus turnouts, and other transit improvements.

Action CIRC-5.3.2 (Roadway Improvements for New Development) - During project review, consult with BCAG to determine appropriate requirements for the installation of stops and streetscape improvements, if needed to accommodate transit.

Goal CIRC-9 - Reduce the use of single-occupant motor vehicles.

Policy CIRC-9.1 (Reduce Peak-Hour Trips) – Strive to reduce single occupant vehicle trips through the use of travel demand management strategies.

Action CIRC-9.1.2 (Existing Employer Trip Reduction Programs) – Encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, and preferential parking for carpools/vanpools.

Action CIRC-9.1.3 (New Employer Trip Reduction Programs) – As a condition of project approval, require new non-residential projects that will employ more than 100 people to submit a Travel Demand Management Plan that identifies strategies, such as those listed in Action CIRC-9.1.2, to reduce single occupancy vehicle trips.

Policy CIRC-9.3 (Emphasize Trip Reduction) - Emphasize automotive trip reduction in the design, review, and approval of public and private development.

Community Design Element

Goal CD-3 - Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.

Policy CD-3.2 (Bicycle and Pedestrians) - Maintain and enhance the pedestrian- and bicycle-friendly environment of Chico.

Action CD-3.2.1 (Pedestrian-Scale Site Planning) – Utilize design techniques provided in the City's Design Guidelines Manual that support pedestrian- and bicycle-friendly site planning.

Policy CD-3.3 (Pedestrian Environment and Amenities) - Locate parking areas and design public spaces within commercial and mixed-use projects in a manner that promotes pedestrian activity.

Goal H.7 - Encourage energy efficiency in housing.

Policy H.7.1: Continue to enforce energy standards required by the State Energy Building Regulations and California Building Code, and reduce long-term housing costs through planning and applying energy conservation measures.

Valley's Edge Specific Plan

The VESP includes various goals, policies, or actions related to sustainability and energy conservation. Under the VESP the following policies and actions would direct development of the project:

Chapter 2 Guiding Principles Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-3: **Promote Outdoor Recreation & Complement Bidwell Park**: Promote outdoor recreation by creating space and facilities which foster, play, exercise, adventure, and social interaction. Strive to complement Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

Action PROS-3.1 - Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.

Action PROS-3.5 - Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan area are within 350 yards of a park, trail, or open space element.

Action PROS-3.6 - Identify suitable land along the plan area's western boundary to accommodate a small lake for recreational purposes, located as to enhanced foreground views and encourage pedestrian, bike usage, while still accommodating vehicular access and parking.

Action PROS-3.8 - Create and maintain no less than 20 miles of open space biking, hiking, and multi-use trails for recreation, play, exercise, and non-motorized transit.

Section 2.3.2 Chapter 4: Land Use

Goal LU-2: Balance Growth and Conservation: Balance growth and conservation by reinforcing the City's compact urban form, by establishing urban grow limits, by managing where and how growth and conservation will occur, in addition to responding to Chico's housing demand, rental units, and commercial space in a responsible and comprehensive planned manner.

Action LU-2.2 - Ensure development is consistent with the City of Chico Climate Action Plan.

Action LU-2.8 - Promote walkability by locating multi-family areas next to Village Core, community clubhouse, community park, and elementary school, all served by a Class I trail network.

Section 2.3.3 Chapter 5: Circulation and Trails

Goal C-1: Multi-modal Circulation and Minimize Greenhouse Gas (GHG) Impacts. Minimize GHG impacts by providing a variety of transportation choices and incorporating features that result in vehicular trip reduction.

Action C-1.1 - Create a network of bike and pedestrian trails that connects the community, enables safe and convenient access between land uses and places of interest, fosters healthy outdoor experiences, and reduces automobile reliance.

Action C-1.2 - Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and GHG emissions; and reinforces the role of the street a public space that unites the community.

Action C-1.3 - Promote non-vehicular travel by creating a network of Class I trails and improved surface trails that caters to residents' and children daily travel trips, safe and efficient routes of travel between residential areas and school, parks, shopping areas, services and employment areas.

Action C-1.5 - Promote and encourage neighborhood electric vehicles (NEV's) by designing all roadways to accommodate their use.

Action C-1.6 - Minimize travel distance and transit efficiency by locating land uses servicing the broader Chico community at the westerly edge of the plan area, directly accessible from the main collector roadway and the Class I trail system facilitating on and off-site connectivity.

Action C-1.7 - Promote electric vehicle usage by providing EV charging stations in public parking lots and in all multi-family projects, by providing 240V outlet in no less than 50% of all garaged residential units, and by supporting electric bike and scooter rental services (e.g. Lime, Bird).

Action C-1.8 - Promote the use of bicycles as modal transportation by designing streetscapes and rest areas to provide shade, and by designing bike lanes, intersections, and roundabouts to enable safe passage.

Action C-1.9 - Create an intermodal park and ride lot along the western boundary of the plan area, served by both the major collector roadway and the Class I trail system.

Action C-1.10 - Ensure that sheltered transit stops are located as directed by BCAG and the City of Chico.

Section 2.3.4 Chapter 6 Infrastructure and Public Facilities

Goal INFR-4: Promote On-Site Clean Energy Generation: Reduce GHG emissions through on-site clean energy generation.

Action INFR-4.1 - Require HOA owned and operated facilities to provide infrastructure capable of generating solar photovoltaic power covering no less than 20% of its internal base electrical loads.

Section 2.3.6 Appendix A Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

Action DES-2.1 - Energy and Atmosphere: Build homes that meet or exceed CALGreen energy efficiency standards. Promote Net Zero ready designs and all electric (low carbon fuel source) buildings.

Action DES-2.2 - As applicable, ensure 100% of residential buildings utilize solar photovoltaics per Title 24.

Action DES-2.7 - Site Sensitive Building Design: Promote building designs that reduce viewshed impacts, maintain architectural variety and continuity and respond to local conditions (diurnal breezes, passive solar design elements etc.).

Action DES-2.10 - Promote use of passive solar design elements and renewable energy technologies through NetZero ready design details and solar within public facilities.

4.5.3 Impacts and Mitigation Measures

Methods of Analysis

CalEEMod Version 2020.4.0 (CAPCOA 2021) was used to estimate the potential proposed project-energy consumption during construction and operation. Assumptions and methods to assess the increase in demand for energy associated with project construction and operation are provided below.

Construction

Construction of the proposed project would result in petroleum consumption primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. Energy consumption from the construction phase of the proposed project were estimated using CalEEMod. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values where project information was not available.

It was assumed that construction of the proposed project would commence in April 2022 and would last approximately 21 years, ending in July 2043.

The construction equipment mix and vehicle trips used for estimating the proposed project-generated construction emissions are shown in Appendix B. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days per month) during project construction.

Fuel consumption from both construction equipment and vehicles were estimated by converting the total CO_2 emissions from each construction phase and source to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. Furthermore, fuel consumption from worker and vendor truck trips were estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, whereas vendor and haul trucks are assumed to be diesel fueled. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020).

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage, including fuel required for construction based on the total hours of operation for construction equipment for each phase over buildout of the project. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 220,976 hours, as summarized in Table 4.5-3.

Table 4.5-3. Proposed Project – Total Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Site Preparation 1	96
Trenching 1	8,344
Grading 1	6,720
Building Construction 1	26,240
Paving 1	4,800
Architectural Coating 1	960
Site Preparation 2	704
Trenching 2	17,664
Grading 2	12,376
Building Construction 2	36,000
Paving 2	8,840
Architectural Coating 2	1,768
Site Preparation 3	480
Trenching 3	4,896
Grading 3	21,392
Building Construction 3	33,640
Paving 3	6,120
Architectural Coating 3	1,224
Site Preparation 4	160
Trenching 4	4,224
Grading 4	2,968
Building Construction 4	11,640
Paving 4	2,120
Architectural Coating 4	424
Site Preparation 5	32
Trenching 5	736
Grading 5	504
Building Construction 5	2,000
Paving 5	360
Architectural Coating 5	200
Site Preparation 6	32
Trenching 6	320
Grading 6	560
Building Construction 6	2,000
Paving 6	360
Architectural Coating 6	72
Total	**220,976**

Source: Appendix B.

The estimated diesel fuel use from construction equipment is shown in Table 4.5-4.

Table 4.5-4. Proposed Project – Total Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO2 (MT)	kg CO2/Gallon	Gallons
Site Preparation 1	2	5.73	10.21	561.38
Trenching 1	4	321.99	10.21	31,536.48
Grading 1	7	387.92	10.21	37,994.17
Building Construction 1	5	311.82	10.21	30,540.35
Paving 1	5	93.56	10.21	9,163.94
Architectural Coating 1	1	6.81	10.21	666.87
Site Preparation 2	2	42.17	10.21	4,130.47
Trenching 2	4	598.56	10.21	58,624.78
Grading 2	7	713.90	10.21	69,921.20
Building Construction 2	5	500.78	10.21	49,047.86
Paving 2	5	206.72	10.21	20,247.02
Architectural Coating 2	1	37.62	10.21	3,684.42
Site Preparation 3	2	34.41	10.21	3,370.71
Trenching 3	4	495.58	10.21	48,538.56
Grading 3	7	593.06	10.21	58,085.76
Building Construction 3	5	478.63	10.21	46,878.33
Paving 3	5	143.12	10.21	14,017.19
Architectural Coating 3	1	26.04	10.21	2,550.75
Site Preparation 4	2	11.47	10.21	1,123.57
Trenching 4	4	171.25	10.21	16,772.49
Grading 4	7	205.44	10.21	20,121.23
Building Construction 4	5	165.61	10.21	16,220.68
Paving 4	5	49.58	10.21	4,855.62
Architectural Coating 4	1	8.51	10.21	833.58
Site Preparation 5	2	2.29	10.21	224.71
Trenching 5	4	29.86	10.21	2,924.90
Grading 5	7	34.89	10.21	3,416.81
Building Construction 5	5	28.46	10.21	2,787.06
Paving 5	5	8.42	10.21	825.12
Architectural Coating 5	1	4.26	10.21	416.79
Site Preparation 6	2	2.29	10.21	224.71
Trenching 6	4	12.97	10.21	1,270.65
Grading 6	7	38.76	10.21	3,796.45
Building Construction 6	5	28.52	10.21	2,793.01
Paving 6	5	8.42	10.21	824.54
Architectural Coating 6	1	1.53	10.21	150.05
			Total	569,142.20

Source: Appendix B.
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

The estimated fuel use for worker vehicles and vendor trucks are presented in Tables 4.5-5 and 4.5-6.

Table 4.5-5. Proposed Project – Total Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon	Gallons
Site Preparation 1	60	0.14	8.78	15.82
Trenching 1	3,576	8.19	8.78	932.24
Grading 1	2,160	4.84	8.78	551.74
Building Construction 1	385,728	818.97	8.78	93,276.41
Paving 1	1,680	3.41	8.78	388.54
Architectural Coating 1	14,160	9.58	8.78	1,091.61
Site Preparation 2	528	1.04	8.78	118.39
Trenching 2	5,520	10.57	8.78	1,204.05
Grading 2	3,978	7.76	8.78	884.16
Building Construction 2	918,000	1,639.92	8.78	186,779.41
Paving 2	3,094	5.27	8.78	600.24
Architectural Coating 2	45,084	76.79	8.78	8,746.37
Site Preparation 3	360	0.61	8.78	69.81
Trenching 3	1,530	6.44	8.78	733.42
Grading 3	6,876	4.69	8.78	534.00
Building Construction 3	634,114	1,045.24	8.78	119,048.15
Paving 3	2,142	3.53	8.78	401.81
Architectural Coating 3	23,256	38.30	8.78	4,362.48
Site Preparation 4	60	0.10	8.78	11.25
Trenching 4	1,320	2.17	8.78	247.61
Grading 4	954	1.57	8.78	178.95
Building Construction 4	65,766	105.24	8.78	11,986.77
Paving 4	742	1.16	8.78	131.91
Architectural Coating 4	2,438	3.59	8.78	408.91
Site Preparation 5	12	0.02	8.78	2.13
Trenching 5	230	0.36	8.78	40.89
Grading 5	162	0.25	8.78	28.80
Building Construction 5	13,800	21.54	8.78	2,453.43
Paving 5	117	0.20	8.78	22.40
Architectural Coating 5	1,400	2.19	8.78	248.90
Site Preparation 6	12	0.02	8.78	2.13
Trenching 6	100	0.16	8.78	17.78
Grading 6	180	0.28	8.78	32.00
Building Construction 6	3,500	5.46	8.78	622.24
Paving 6	126	0.20	8.78	22.40
Architectural Coating 6	144	0.22	8.78	25.60
			Total	436,222.77

Source: Appendix B.
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Table 4.5-6. Proposed Project – Total Construction Vendor Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon	Gallons
Site Preparation 1	0	0.00	10.21	0.00
Trenching 1	0	0.00	10.21	0.00
Grading 1	0	0.00	10.21	0.00
Building Construction 1	101,024	817.42	10.21	80,060.87
Paving 1	0	0.00	10.21	0.00
Architectural Coating 1	0	0.00	10.21	0.00
Site Preparation 2	0	0.00	10.21	0.00
Trenching 2	0	0.00	10.21	0.00
Grading 2	0	0.00	10.21	0.00
Building Construction 2	232,200	1,679.51	10.21	164,496.26
Paving 2	0	0.00	10.21	0.00
Architectural Coating 2	0	0.00	10.21	0.00
Site Preparation 3	0	0.00	10.21	0.00
Trenching 3	0	0.00	10.21	0.00
Grading 3	0	0.00	10.21	0.00
Building Construction 3	168,200	1,153.80	10.21	113,006.49
Paving 3	0	0.00	10.21	0.00
Architectural Coating 3	0	0.00	10.21	0.00
Site Preparation 4	0	0.00	10.21	0.00
Trenching 4	0	0.00	10.21	0.00
Grading 4	0	0.00	10.21	0.00
Building Construction 4	18,042	121.09	10.21	11,860.32
Paving 4	0	0.00	10.21	0.00
Architectural Coating 4	0	0.00	10.21	0.00
Site Preparation 5	0	0.00	10.21	0.00
Trenching 5	0	0.00	10.21	0.00
Grading 5	0	0.00	10.21	0.00
Building Construction 5	5,300	34.93	10.21	3,421.06
Paving 5	0	0.00	10.21	0.00
Architectural Coating 5	0	0.00	10.21	0.00
Site Preparation 6	0	0.00	10.21	0.00
Trenching 6	0	0.00	10.21	0.00
Grading 6	0	0.00	10.21	0.00
Building Construction 6	1,300	8.57	10.21	839.13
Paving 6	0	0.00	10.21	0.00
Architectural Coating 6	0	0.00	10.21	0.00
			Total	373,684.13

Source: Appendix B.
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Operations

Potential energy consumption from proposed project operations was estimated for area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment at project buildout. Operational year 2045 development scenario was assumed, which is consistent with the traffic impact analysis (TIA) prepared for the proposed project (Appendix K).

The proposed project would be "all-electric," built without natural gas per Reduction Measure E-2 within the City's 2021 Climate Action Plan Update (City of Chico 2021). CalEEMod default values for energy consumption, which assume compliance with the 2019 Title 24 Building Energy Efficiency Standards, were applied for the proposed project analysis.

Regarding mobile sources, motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2020.4.0, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC, version 2017, was adjusted based on City specific traffic data. The CalEEMod default fleet mix in the model run contains too high a proportion of heavy-duty (HHD) trucks (8.7%) to accurately model the operational phase of the project. The mix of land uses for the proposed project would generate traffic more similar to a collector street in the City. Based on City traffic samples a HHD mix of 0.12% and a mid-size (i.e., medium heavy-duty vehicles, other buses, urban buses, school buses, and motorhomes) vehicle mix of 1.8% is appropriate for the project area. In addition, trip generation rates for the proposed project were based on the TIA prepared for the proposed project (Appendix K), as provided in Table 4.5-7.

Table 4.5-7. Proposed Project Trip Rate Assumptions

Land Use	Trip Rate		
	Weekday[a]	*Saturday*[b]	*Sunday*[b]
Per Dwelling Unit			
Single Family Housing	6.76	6.83	6.12
Apartments Low Rise	5.81	6.46	4.98
Retirement 55+ Community	3.39	2.87	2.76
Per 1,000 Square Feet			
Shopping Center	64.60	78.92	36.11
General Office Building	6.51	1.45	0.62
Medical Office Building	27.67	6.81	1.13
Elementary School	1.50	0.00	0.00
Per Acre			
Soccer Complex	49.69	124.85	139.50

Source: Appendix K.
Notes:
[a] Weekday trip rates are from the proposed project TIA.
[b] Saturday and Sunday trip rates were either adjusted in proportion to the CalEEMod default weekday, Saturday and Sunday trip rates and the TIA weekday trip rate or assumed to be the same as the weekday trip rate.

Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total mobile source CO_2 emissions from the proposed project land uses to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel.

Table 4.5-8 presents the anticipated annual electricity demand for the proposed project.

Table 4.5-8. Proposed Project – Annual Operational Electricity Demand

Land Use	kWh/Year
Building and Lighting Electricity Demand	
Single Family Housing	10,044,600
Apartments Low Rise	625,834
Retirement Community	5,540,700
Regional Shopping Center	669,989
General Office Building	5,555,980
Medical Office Building	2,888,990
Elementary School	686,818
Park	0
Building Total	**26,012,911**
Other Electricity Demand	
All Land Uses – Water/Wastewater Total	**1,535,942**
Total	**27,548,853**

Source: Appendix B.
Notes: kWh = kilowatt-hour.

The project's estimated annual fuel usage from operational mobile sources is shown in Table 4.5-9.

Table 4.5-9. Proposed Project – Annual Operational Petroleum Consumption

Fuel	Vehicle MT CO_2	kg CO_2/Gallon[a]	Gallons
Gasoline	12,098.58	8.78	1,377,970.32
Diesel	1,501.45	10.21	147,056.35
		Total	**1,525,026.67**

Source: Appendix B.
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

4.5-1 The proposed project could result in consumption of energy or energy resources during project construction or operation.

Implementation of the proposed project would increase the demand for electricity in the City, as well as gasoline consumption during construction and operation of future development.

Electricity

Construction

Temporary electric power for lighting and electronic equipment such as computers may be needed inside temporary construction trailers. However, the electricity used for such activities would be temporary and would be substantially less than that required for proposed project operation and would have a negligible contribution to the proposed project's overall energy consumption.

Operational

The operational phase would require electricity for multiple purposes including building heating and cooling, lighting, appliances, electronics, and water and wastewater conveyance. As discussed above under Methods of Analysis (Operational Emissions), CalEEMod default values for electricity consumption for the proposed project's land uses were revised to account for compliance with the 2019 Title 24 standards. Compared with the 2016 standards, single-family savings are 4% of electricity and low-rise multi-family, savings are 2% of electricity. For non-residential buildings, the savings are 10.7% of electricity.

As shown in Table 4.5-7, buildout of the VESP is estimated to have a total electrical demand of 24,396,653 kWh per year (or 24 million kWh per year) for buildings usage and water/wastewater conveyance, respectively. As previously discussed, the County's annual electricity use was approximately 1.5 billion kWh in 2018. Therefore, the proposed project's electrical consumption would be a small percentage of the County's annual use (current City data is not available). The proposed project would be constructed in accordance with the current Title 24 standards at the time of construction. Furthermore, the proposed project would promote energy efficiency and renewable energy through implementation of VESP actions and policies such as INFR-4.1, DES-2.1, DES-2.2, and DES-2.10. These measures would require on-site clean energy generation, require new buildings to use PV systems to cover a portion of the internal base electrical loads, have buildings that meet or exceed the CALGreen energy efficiency standards, and promote Net Zero ready designs and all electric (low carbon fuel source) buildings. Therefore, due to the inherent increase in efficiency of building code regulations and compliance with the energy conserving VESP actions, the proposed project would not result in a wasteful use of energy. Impacts related to operational electricity use would be **less than significant**.

Natural Gas

Construction

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as an alternative fuel for construction equipment or vehicles would be substantially less than that required for proposed project operation and would have a negligible contribution to the proposed project's overall energy consumption.

Operational

It was assumed that the proposed project would be built without natural gas during operations and would be "all-electric", per Reduction Measure E-2 within the City's 2021 Climate Action Plan Update, VESP Action LU-2.2 and consistent with Section 4.7, Greenhouse Gases (City of Chico 2021). As such, natural gas was zeroed out in CalEEMod, and replaced with equivalent electricity demand to account for water heating and heating, ventilation, and air conditioning (HVAC) operations. Therefore, the proposed project would not result in a wasteful use of energy in regards to natural gas consumption during operations and there would be **no impact**.

Petroleum

Construction

Petroleum would be consumed throughout construction of the proposed project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and vehicle miles traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities, vendor trucks, and haul trucks would rely on diesel fuel. Construction workers would travel to and from the proposed project site throughout the duration of construction. It was assumed that construction workers would travel in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 220,976 hours, as summarized in Table 4.5-1. The estimated fuel use for construction equipment, worker vehicles, and vendor trucks are presented in Table 4.5-2 through Table 4.5-4.

As shown in Table 4.5-2 through 4.5-4, the proposed project is estimated to consume approximately 1,379,049 gallons of petroleum during the construction phase. For comparison, approximately 605 billion gallons of petroleum would be consumed in California over the course of the proposed project's construction phase, based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (EIA 2019c). Thus, the total expected petroleum use from the proposed project's construction represents approximately 0.000002% of California's consumption of petroleum over the construction duration.[1] In accordance CARB's Airborne Toxics Control Measure, implementing development projects within the VESP would be required to restrict heavy-duty diesel vehicle idling time to 5 minutes, which would reduce petroleum usage. Overall, because petroleum use during construction would be temporary, and would not be wasteful or inefficient, impacts would be **less than significant**.

Operation

The fuel consumption resulting from the proposed project's operational phase would be attributable to various vehicles associated with each land use. Petroleum fuel consumption associated with motor vehicles traveling within the City during operation is a function of VMT. The VESP is designed to include complete streets that enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users. Trip generation rates for the proposed project were based on the Traffic Impact Analysis (TIA) (Appendix K).

As depicted in Table 4.5-8, mobile sources from buildout of the VESP would result in a maximum of approximately 1,525,027 gallons of petroleum fuel usage per year. By comparison, California as a whole consumes approximately 28.7 billion gallons of petroleum per year (EIA 2019c). The VESP also includes the policies and actions, such as VESP actions PROS-3.1, LU-2.8, C-1.2, C-1.3, and C-1.7 which require that the proposed project reduce petroleum consumption through promotion of a multimodal transportation network (i.e., walking, bicycling, transit, and vehicles) throughout the plan area. In addition, actions C-1.5, C-1.7, and C-1.8 would promote alternative methods of transportation by requiring the proposed project to develop NEV and EV infrastructure.

[1] Petroleum consumption is not available at the County level; therefore, State data is referenced.

Over the lifetime of the proposed project, the fuel efficiency of vehicles is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As detailed in Section 4.5.2, there are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles that combines the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2011). As such, operation of the proposed project is expected to use decreasing amounts of petroleum over time due to advances in vehicle fuel economy standards.

The proposed project would increase petroleum use during operation, but due to efficiency increases the amount of petroleum consumed would diminish over time. Petroleum consumption associated with operation of the proposed project would not be considered inefficient or wasteful and would result in a **less-than-significant impact**.

In summary, the consumption of energy resources (including electricity, natural gas, and petroleum) during the project construction and operation would not be considered inefficient or wasteful and would result in a **less-than-significant impact**.

Mitigation Measures

No mitigation measures are required.

4.5-2 The proposed project could conflict with plans for renewable energy or energy efficiency.

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and nonresidential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, wall/floor/ceiling assemblies, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and nonresidential buildings constructed in the State of California in order to reduce energy demand and consumption. Part 11 of Title 24 also includes the CALGreen standards, which established mandatory minimum environmental performance standards for new construction projects. The proposed project would comply with Title 24, Part 6 and Part 11, per state regulations. In addition, the proposed project would promote energy efficiency and renewable energy through implementation of VESP actions and policies such as INFR-4.1, DES-2.1, DES-2.2, and DES-2.10. These measures would require on-site clean energy generation, require new buildings to utilize PV systems to cover a portion of the internal base electrical loads, have buildings that meet or exceed the CALGreen energy efficiency standards, and promotion of Net Zero ready designs and all electric (low carbon fuel source) buildings. Thus, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the proposed project would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The geographic scope for the analysis of cumulative energy impacts consists of the City of Chico, as well as all other surrounding areas serviced by PG&E for electrical and natural gas service.

4.5-3 The proposed project could result in a cumulatively considerable impact due to consumption of electricity, natural gas, diesel or petroleum during construction or operation.

Buildout of the City's General Plan would result in an increase of 750,071,000 kilowatt hours of energy (natural gas and electricity) by 2030 within the City, resulting in the total consumption of approximately 2,181,775,000 kilowatt hours of energy compared with 2008 levels. However, future residential and nonresidential development under the General Plan would be required to adhere to the state's current energy efficiency requirements and it is anticipated new development would be more energy efficient Compliance with General Plan policies along with implementation of AB 1493 project and cumulative impacts would be considered less than significant.

Project construction would not result in wasteful, inefficient, or unnecessary use of energy, in large part due to the temporary nature of the construction period. Additionally, the operational activity of the proposed project would be minimized through energy reduction strategies pursuant to Title 24, as well as through compliance with the energy conserving VESP actions and applicable General Plan policies. Therefore, the project's contribution to the cumulative increase in wasteful, inefficient or unnecessary consumption of energy would not be considerable resulting in a **less-than-significant cumulative impact.**

Mitigation Measures

No mitigation measures are required.

4.5.4 References

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4.6 Geology and Soils

4.6.0 Introduction

This section describes the existing geology, soils, and paleontological resources setting of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project-level and cumulative impacts, and identifies mitigation measures related to implementation of the Valley's Edge Specific Plan project (proposed project or VESP). This section analyzes potential impacts of the proposed project with respect to seismic concerns, such as fault rupture and ground shaking, unstable soils, and the potential for paleontological resources to be present.

Comments received in response to the Notice of Preparation (NOP) include concerns associated with the proposed project's location atop a lava cap and hard bedrock. Specifically, there were concerns the lava cap could impede groundwater recharge and make management of storm drainage challenging. Groundwater recharge, stormwater drainage, and general hydrology concerns are addressed in further detail within Section 4.9, Hydrology, Water Quality, and Drainage. Other scoping comments received involve site topography and its potential influence on wildfire risk, and noise from construction atop hard bedrock. Wildfire risk and noise concerns are addressed further in Section 4.14, Wildfire, and Section 4.10, Noise, respectively. A copy of the NOP comments received along with the NOP are included in Appendix A.

Sources reviewed to prepare this section include a 2019 Preliminary Geotechnical Investigation Report (Geotechnical Report) and its associated appendices prepared by GEOPlus Partners (see Appendix E), as well as publicly available geologic/soils documents from the California Geological Survey (CGS), U.S. Geological Survey (USGS), Natural Resources Conservation Service (NRCS), and the City of Chico.

4.6.1 Environmental Setting

This section described the existing conditions in the project area based on the site-specific Geotechnical Report by GEOPlus Partners (Appendix E), published geologic maps and reports, and online resources.

Topography

The proposed project site consists of 1,448 acres of land, characterized by gentle to moderately sloping terrain generally descending to the west-southwest (see Figure 4.6-1). Based on the USGS 7½-minute topographic maps for the Chico Quadrangle, and a topographic map prepared by Frayji Design Group (2019), the site elevation ranges from about 550 to 580 feet above mean sea level (amsl) at the northeast corner to about 250 feet amsl near the southwest corner. Comanche Creek traverses the southern boundary of the site, and three unnamed drainages traverse the central and northern portions of the site, all of which are intermittent (e.g., seasonal) and generally trend to the west-southwest. The proposed project site is bounded to the north and south by Little Chico Creek and Butte Creek, respectively, both of which are perennial streams with much larger watersheds than those that cross the site. Two broad buttes[1] dominate the site topography between Comanche Creek and the central drainage, and between the northern drainage and the north boundary of the

[1] A butte is a flat-topped landform whose outer edges are marked by stream canyons and/or cliffs, and in the project area, are formed by uplift and subsequent erosion of the Tuscan Formation. Butte County gets its name from this geomorphic structure which dominates the lower foothills of the northern Sierras.

site. The majority of the site ranges in elevation from 300 to 500 amsl with slope gradients of less than 5% throughout the majority of the site and 5 to 15% along the side-slopes of the creek drainages (USGS 2018). Where outcrops of volcanic rock protrude in thin strips along the edges of Little Chico Creek, Comanche Creek, and Butte Creek, slopes locally exceed 15%, up to a maximum of 40% (USGS 2018).

General Soil/Geologic Conditions

The *Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, California* (Helley and Harwood 1985) indicates that the near-surface deposits in the vicinity of the project site consist of the Pliocene[2] Tuscan Formation (see Figure 4.6-1). Bedrock of the Tuscan Formation underlies eastern portions of the City of Chico and the adjacent areas in unincorporated Butte County, along the base of the foothills. The Tuscan Formation consists of a series of layers deposited by volcanic mudflows, gradually building a subdued landscape. The Tuscan Formation is characterized by near horizontal layers within the formation and four-million-year-old volcanic ash horizon at the bottom of the formation (City of Chico 2010). Groundwater in the Sacramento Valley Groundwater Basin is contained primarily within the pore spaces of the sand and gravel layers of the Tuscan Formation, with much of the groundwater being confined under pressure by layers of impermeable clays, mudflows, or tuff breccia[3] (City of Chico 2010).

The underlying bedrock formation consists predominantly of variably weathered and variably strong lahar.[4] The lahar appears as a fine-grained matrix of mud, volcanic ash, sand and gravel with inclusions of andesitic gravel, cobble and boulder. Across the vast majority of the site, the lahar is hard upon first encountering beneath a thin mantle of soil, particularly on the broad buttes. This condition is typically referred to as "lava cap". The old Doe Mill Road traverses the north butte from the end of the paved Doe Mill Road at the western margin of the property to the northeast corner of the site. This road exposes the lahar surface "lava cap" through almost its entire length (GEOPlus Partners 2019).

Soils

The type, aerial extent, and some key physical and hydrological characteristics of soils within proposed project site were identified based on a review of a soil survey of Butte County completed by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). The USDA NRCS online Web Soil Survey system provides soil data and information produced by the National Cooperative Soil Survey (NCSS). Data available includes soil properties, qualities, erosion susceptibility, vegetation data, and other physical and chemical soil properties. A majority of the soil units at the project site belong to the Doemill and Jokerst soil series. Over half of the soils of the project site consist of Doemill-Jokerst, and another quarter consists of Jokerst-Doemill-Typic Haploxeralfs (NRCS 2019). NCSS provides the following description of each:

> ***Doemill Series***: The Doemill series consists of shallow, somewhat poorly drained soils that formed in residuum from volcanic mudflow breccia. Doemill soils are on mounds and convex areas on ridge tops and side slopes on volcanic ridges along the Cascade foothills. Doemill soils are very prone to runoff. A fluctuating water table can occur between the top of the bedrock and 2 inches (5 cm) below the surface of the soil from November through March (NCSS 2006a).

[2] The Pliocene Epoch extends from 5.3 to 2.6 million years ago.
[3] Rocks composed of a conglomerate mix of volcanic materials. Consists of consolidated volcanic ash ("tuff") and larger volcanic rocks.
[4] A lahar is a mix of volcanic ash, rocky debris, and water that flows down the slopes of a volcano. "Lahar" herein describes the lithified rock, or "lava cap" that forms the bedrock at the site.

Jokerst Series: The Jokerst series consists of very shallow, poorly drained soils that formed in residuum from volcanic mudflow breccia. Jokerst soils are in swales and in broad planar areas on ridge tops and side slopes on volcanic ridges of the Tuscan Formation, along the Cascade foothills. Jokerst soils are poorly drained and are frequently ponded up to 1 inch (3 cm) for a brief duration on gentler slopes from December through March. The soils are frequently flooded for very brief periods on gentler slopes from December through March. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through March (NCSS 2006b).

One common characteristic of the Doemill-Jokerst soil series is that the soils are shallow and underlain by restrictive bedrock materials of the Tuscan Formation within 4 to 14 inches. The remaining soils (collectively consisting of about less than a quarter of the site) include alluvial terrace and stream channel deposits, consisting of unconsolidated sand, gravel, cobble and silt, and outcrops/ridges formed from gravelly loam. The largest portion of the remaining soils is from the Clearhayes-Hamslough soil series, consisting of about 4.3% of the remaining project site. These soils are deeper, sandier, and less likely to have a restrictive layer such as bedrock or hardpan near the surface.

Table 4.6-1 presents an area-weighted average of key soil properties for all of the soil map units belonging to the soils overlying bedrock formations (i.e., where the Doemill-Jokerst soil series dominates) versus the soils overlying stream valley bottoms (i.e., where the Clearhayes-Hamslough soil series dominates). Note that these properties are based on representative soil profiles from the NRCS (2019) that are not site-specific but provide a reasonable estimation. The plasticity index and liquid limit of soils shown in Table 4.6-1 have a close relationship to shrink-swell behavior as well as their suitability for reuse as engineered fill.

Table 4.6-1. Averaged Properties of the Doemill-Jokerst and Clearhayes-Hamslough Soil Series

Property	Bedrock Soils (Doemill-Jokerst Soil Series)	Alluvial Soils (Clearhayes-Hamslough Soil Series)
pH	6.7	7.3
% clay	19	25
% sand	32	56
% silt	48	16
Plasticity index (PI)[1]	13	20
Liquid limit (LL)[2]	31	41

Source: NRCS 2019; Appendix E.
Notes:
1 PI is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid (NRCS 2019). Examples of typical PI values include 0 for sand, 20 for silt, and 45 for clay (FAO 2007).
2 LL is used to indicate the plasticity characteristics of a soil. It is the water content, on a percent by weight basis, of the soil at which the soil changes from a plastic to a liquid state. Soils that have a high liquid limit have the capacity to hold a lot of water while maintaining a plastic or semisolid state (NRCS 2019). Examples of typical LL values include 20 for sand, 27 for silt, and 100 for clay (FAO 2007).

A full list of soil units occurring at the project site is shown in Table 4.6-2, which also describes the acreage, percent of the project area, and the hydrologic soil group of each unit. Hydrologic soil groups are based on estimates of runoff potential that each soil type has based on physical and chemical attributes. Soils are assigned a group (A through D) according to their rate of water infiltration within the protection of vegetation,

completely saturated, and receive long-term precipitation durations. Hydrologic soil groups A through D (and dual classes of A/D, B/D, and C/D) are defined as follows:

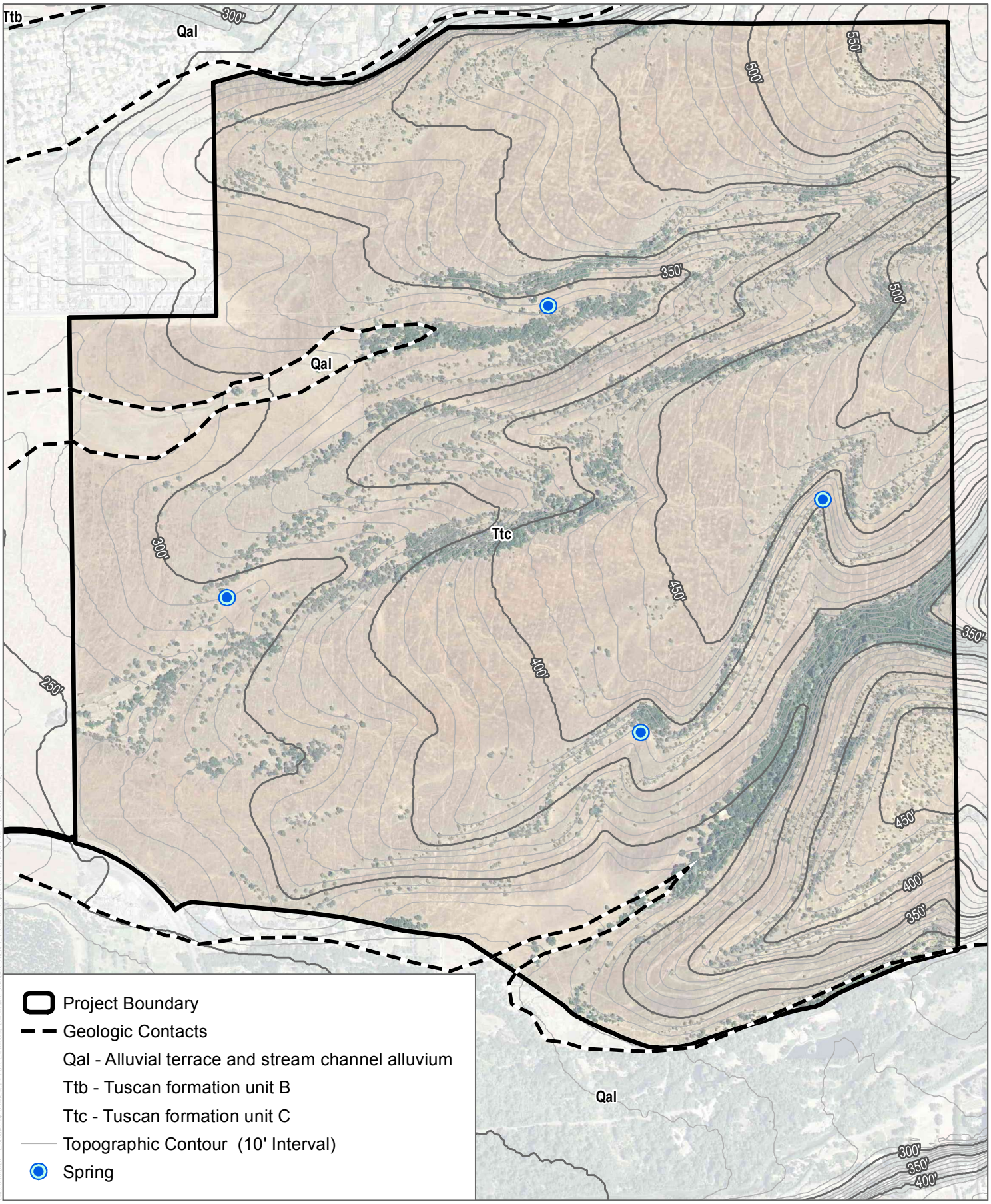
- Group A: Soils having high infiltration rates (or a low runoff potential). These are typical to sands or gravelly sands.
- Group B: Soils having a moderate infiltration rate. These soils can consist of moderately fine to moderately course physical soil particles.
- Group C: Soils having a slow infiltration rate. These soils consist of moderately fine to fine particles that do not allow water to be easily transmitted through.
- Group D: Soils in this group have a very slow infiltration rate (high runoff potential). Soils in this group consist of clay-type coils, high shrink-swell potential, areas with a high water table, claypan near the surface, and soils that are shallow over impervious surfaces (like bedrock).

The dominant soils onsite have high runoff potential (Group D) because the soils are shallow and because the low permeability of the lava cap minimizes deep infiltration of rainfall.

Table 4.6-2. Soil Units at the Project Site

Soil Unit	Acres (Percent of Project Site)	Hydrologic Soil Group
Xerorthents, Tailings and 0 to 50% slopes	2.0 (0.1%)	A
Redsluff gravelly loam, 0 to 2% slopes	0.1 (0.0%)	C
Redtough-Redswale , 0 to 2% slopes	1.2 (0.1%)	D
Doemill-Jokerst , 0 to 3% slopes	65.3 (4.5%)	D
Doemill-Jokerst , 3 to 8% slopes	800.9 (55.4%)	D
Jokerst-Doemill-Typic Haploxeralfs , 8 to 15% slopes	404.6 (28.0%)	D
Jokerst-Doemill-Typic Haploxeralfs , 15 to 30% slopes	89.4 (6.2%)	D
Doemill-Jokerst-Ultic Haploxeralfs, thermic complex, 8 to 15% slopes	1.1 (0.1%)	D
Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs complex, 15 to 30% slopes	2.9 (0.2%)	D
Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs complex, 30 to 50% slopes	1.7 (0.1%)	D
Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs , 50 to 70% slopes	14.2 (1.0%)	C
Clearhayes-Hamslough , 0 to 2% slopes	61.6 (4.3%)	C/D
Total	1,445.1 (100%)[1]	-

Source: NRCS 2019.
Notes:
[1] The mapped area of interest in the NRCS Web Soil Survey encompassed a total of 1,445.1 acres. This is 99.8% of the approximate 1,448 acres of land described in the Valley's Edge Specific Plan.



SOURCE: USGS (Topography) 2010, Helley and Harwood 1985, GeoPlus 2019

DUDEK

0 550 1,100 Feet

FIGURE 4.6-1

Site Topography and Geology

Valley's Edge Specific Plan Project

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Potential Geologic Hazards

The project site is not located on any Alquist-Priolo fault zone or on expansive soils, and is not subject to liquefaction or lateral spreading (DOC 2015). However, the project site includes potential geologic hazards such as seismic ground-shaking. Specific geologic hazards are discussed in more detail below.

Regional Faulting and Seismic Hazards

The City of Chico and the surrounding area are relatively free from significant seismic and geologic hazards. The project site is not located on any Alquist-Priolo special study zones. There are, however, faults within the region that have the potential to affect the project site, including the historically-active Cleveland Hills Fault, located approximately 20 miles south of the project site. This fault generated a 5.9 earthquake on August 1, 1975, near Lake Oroville, California (CGS 2020). The closest known potentially active fault is the Quaternary-age Chico Monocline Fault, located 1 to 2 miles east of the project site; two deep and distant aftershocks associated with the above described Oroville earthquake are attributed to the southern end of the Chico Monocline Fault (GEOPlus Partners 2019). Other active faults and fault zones located as distant as 100 miles away from Butte County have the potential to cause shaking in the county, including the project site. These faults include the Coast Ranges Faults, the San Andreas Fault, the Midland-Sweitzer Fault, and Eastern Sierra Faults (City of Chico 2010).

Fault Rupture: The CGS classifies faults as:

- Holocene-active faults, which are faults that have moved during the past approximately 11,700 years. These faults are capable of surface rupture.
- Pre-Holocene faults, which are faults that have not moved in the past 11,700 years. This class of fault may be capable of surface rupture but is not regulated under the Alquist-Priolo Special Studies Zones Act of 1972, which regulates the construction of buildings to be used for human occupancy.
- Age-undetermined faults, which are faults where the most recent fault movement has not been determined (CGS 2018).

Faults that exhibit signs of geologically recent (active within the past 11,700 years) movement are considered Holocene-active and are most likely to experience movement in the future. Therefore, Holocene-active faults are generally thought to have the greatest fault rupture potential (CGS 2018). As previously mentioned, the Chico Monocline Fault is located adjacent to the project site, but is of Pre-Holocene age and is not considered to present a surface rupture hazard.

No fault, liquefaction, or seismically-induced landslide studies have been performed by the CGS for the Chico U.S. Geological Survey 7.5 minute Quadrangle (DOC 2015). With consideration of the above information, the Geotechnical Report determined that the potential for surface fault rupture to occur at the site is very low (Appendix E).

Ground Shaking: Ground shaking is the movement of the earth's surface as a result of an earthquake. Ground motion produced by seismic waves emanates from slow or sudden slip on a fault. The degree of ground shaking felt at a given site depends on the distance from the earthquake source, the magnitude of the earthquake, the type of subsurface material on which the site is situated, and topography. Generally, ground shaking is less severe on rock than on alluvium or fill. Ground shaking can produce significant damage to structures not equipped to withstand ground motion. Faults located as distant as 100 miles away from Butte County have the potential to cause shaking at the project site, including the Coast Ranges Faults, the San Andreas Fault, the Midland-Sweitzer Fault, and Eastern Sierra Faults (City of Chico 2010).

The Geotechnical Report determined that an earthquake generated on a distant fault, such as the ones listed above, may subject the site to low seismic activity relative to other areas of California (Appendix E). A primary tool that seismologists use to describe ground-shaking hazard is a probabilistic seismic hazard assessment (PSHA). The PSHA for the State of California takes into consideration the range of possible earthquake sources (including such worse-case scenarios as described above) and estimates their characteristic magnitudes to generate a probability map for ground-shaking. The PSHA maps depict values of peak ground acceleration (PGA) [5] that have a 10% probability of being exceeded in 50 years (1 in 475 chance). This probability level allows engineers to design buildings for ground motions that have a 90% chance of NOT occurring in the next 50-years, making buildings safer than if they were simply designed for the most likely events. The proposed project site is estimated to experience a peak ground acceleration (PGA) with a 10% probability of being exceeded in 50 years of 0.179g (CGS 2008). This level of ground shaking (only expected to have a 10% chance of occurring in 50 years) would result in shaking that would be strongly felt, but that would have the potential for only light damage (most likely limited to older/vulnerable structures). The Geotechnical Report includes seismic design parameters to prevent structural damage and risk to human life.

Liquefaction and Lateral Spreading: Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Earthquake waves cause water pressures to increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. Three factors are required for liquefaction to occur: (1) loose, granular sediment; (2) groundwater saturation of the sediment (water fills the spaces between sand and silt grains); and (3) strong shaking. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface, usually in uneven patterns that damage buildings, roads, and pipelines (City of Chico 2010).

The Seismic Hazards Mapping Act of 1990 directs the California Department of Conservation, CGS to identify and mitigate seismic hazards. As previously discussed, seismic hazard zones, including potential liquefaction (and associated lateral spreading) and seismically induced landslide areas, have not been evaluated by the CGS for the Chico Quadrangle (DOC 2015). Because the site is devoid of alluvial deposits thicker than about 4 feet, the Geotechnical Report concludes that seismically-induced liquefaction and lateral spreading is not a geologic hazard at the site (Appendix E). It is also notable that the highest level of seismic shaking expected in the next 50 years (0.179g) is unlikely to be strong enough to induce liquefaction, even in soils that are otherwise susceptible.

Landslides/Slope Stability

Steep slopes, in conjunction with certain soil types, can be prone to landslides. Some of the natural causes of this instability are earthquakes, weak soils, erosion, heavy rainfall, and fire. Human activities such as poor grading that undercuts steep slopes or overloads them with fill, excessive irrigation, and removal of vegetation can also contribute to landslides. Landslides occur in Butte County, but are not common. Most landslides in Butte County occur on slopes greater than 15%, and most new landslides occur in areas that have experienced previous landslides. The areas of highest landslide potential are in the mountainous central area of the county where well-developed soils overlay impervious bedrock on steep slopes, which at times undergo heavy rainfall (Butte County 2018).

[5] The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. For comparison purposes, the maximum peak acceleration value recorded during the Loma Prieta earthquake was in the vicinity of the epicenter, near Santa Cruz, at 0.64g.

The California Department of Conservation manages the California Geological Survey Information Warehouse, which maps areas of regulation and hazards related to geology, landslide risk, mineral lands classification, and tsunamis. The project site is not mapped for landslide hazards on the Information Warehouse (DOC 2015). However, the project site does include potential hazards related to rock toppling or soil sloughing along the butte edges due to steep slopes.

Soil Compression and Expansion

Expansive soils are soils that tend to shrink or swell depending on their moisture content. These swelling soils typically contain clay minerals, as many types of clay minerals are expansive. When saturated, the clay minerals absorb water molecules and expand. Conversely, when dry, the clay minerals shrink, leaving large voids in the soil. When structures are located on expansive soils, foundations tend to rise during the wet season and shrink during the dry season. This movement can create new stresses on various sections of the foundation and connected utilities and can lead to structural failure and damage to infrastructure. Cracked foundations, floors, and basement walls are typical types of damage caused by swelling soils. Damage to the upper floors of buildings can occur when motion in the structure is significant (City of Chico 2010).

The site reconnaissance performed by GEOPlus Partners (2019) determined that the site is mantled with relatively thin soil deposits, ranging from less than ½-foot to about 1½-foot thick. The surficial soils contain variable amounts of gravel, sand and cobble, and occasionally boulder. The soils classify as clayey sand, clayey sand with gravel and cobble, and as sandy lean clay with gravel and cobble. Based on laboratory testing, these soils are typically of low to medium plasticity and very low to low expansion potential. No expansive soils or bedrock material were observed on the site (Appendix E).

Paleontological Resources

The Pliocene-age Tuscan Formation unit C (Ttc) is mapped within the project area boundaries. This consists predominantly of lahar units of well-consolidated volcanic ash, mud, sand, and gravel, with a variable content of andesitic cobbles and boulders (Appendix E).

A records search of the UC Museum of Paleontology found 137 fossils from Butte County in their collections database (UCMP 2020). However, most of these are marine formations and there are no specimens in the database related to the Tuscan Formation. Due to the destructive nature of geologic formations that are volcanic in origin, the chance of encountering paleontological resources at the site is considered low.

4.6.2 Regulatory Setting

Federal Regulations

Installation of underground infrastructure/utility lines must comply with national industry standards specific to the type of utility. The discharge of contaminants must be controlled through the National Pollutant Discharge Elimination System (NPDES) permitting program for management of construction and municipal stormwater runoff. These standards contain specifications for installation, design, and maintenance to reflect site-specific geologic and soils conditions (refer to Section 4.9, Hydrology, Water Quality, and Drainage, for further discussion).

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration's (OSHA's) Excavation and Trenching standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State Regulations

The statewide minimum public safety standard for mitigation of earthquake hazards (as established through the California Building Code (CBC), the Alquist-Priolo Act, and the Seismic Hazards Mapping Act) requires the minimum level of mitigation for a project to reduce the risk of ground failure during an earthquake to a level that does not cause the collapse of buildings for human occupancy, but in most cases, does not require that the mitigation prevent or avoid the ground failure itself. It is not feasible to design all structures to completely avoid damage in worst-case earthquake scenarios. Accordingly, regulatory agencies have generally defined an "acceptable level" of risk as that which provides reasonable protection for public safety, although it does not necessarily ensure continued structural integrity and functionality of a project (14 CCR 3721(a)). Nothing in these acts, however, precludes local agencies from enacting more stringent requirements, requiring a higher level of performance, or applying these requirements to developments other than those that meet the acts' definitions of "project."

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the state geologist established regulatory zones, called earthquake fault zones, around the surface traces of active faults, and published maps showing these zones. Earthquake fault zones are designated by the CGS and are delineated along traces of faults where mapping demonstrates surface fault rupture has occurred within the past 11,000 years. Construction within these zones cannot be permitted until a geologic investigation has been conducted to prove that a building planned for human occupancy will not be constructed across an active fault. These types of site evaluations address the precise location and recent nature of rupture along traces of the faults and are typically based on observations made in trenches excavated across fault traces.

The project site is not located on any Alquist-Priolo fault zone and is thus not subject to the above regulations.

Seismic Hazards Mapping Act

In order to address the secondary effects of strong ground shaking, namely earthquake-induced liquefaction and landslide hazards (note that these hazards are distinct from the fault surface rupture hazard regulated by the Alquist-Priolo Act), the state passed the Seismic Hazards Mapping Act of 1990 (Cal. Pub. Resources Code § 2690-2699). Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate seismic hazard zones. This act requires the state geologist to delineate various seismic hazard zones and requires local permitting agencies to regulate certain development projects within these zones (i.e., zones of required investigation). Before a development permit may be granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated

into the project design. Evaluation and mitigation of potential risks from seismic hazards within zones of required investigation must be conducted in accordance with the CGS Special Publication 117A, adopted March 13, 1997, by the State Mining and Geology Board, as updated in 2008 (DOC 2008). The State Mining and Geology Board provides additional regulations and policies to assist municipalities in preparing the Safety Element of their General Plan and encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.

Seismic hazard zones, including potential liquefaction and seismically induced landslide areas, have not been evaluated by the CGS for the Chico Quadrangle (DOC 2015).

California Building Standards Code

The state regulations protecting structures from most geo-seismic hazards are contained in the California Building Code (CBC; Cal. Code Regs. tit. 24, Part 2), which is updated on a triennial basis. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every public and private building in the state or any appurtenances connected or attached to such buildings or structure. The 2019 CBC, effective January 1, 2020, is based on the current (2018) International Building Code.

The 2019 CBC includes structural design requirements governing seismically resistant construction, including (but not limited to) factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the building location and the proposed building design. Included in the CBC are requirements for foundation and soil investigations; excavation, grading, and fill; damp-proofing and water-proofing; allowable load-bearing values of soils; the design of foundation walls, retaining walls, embedded posts and poles and foundations; and design of shallow foundations and deep foundations. The CBC also includes requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes.

California Division of Occupational Safety and Health (CalOSHA)

Construction activities are subject to occupational safety standards for excavation and trenching, as specified in the California Safety and Health Administration regulations (Title 8 of the California Code of Regulations) and in Chapter 33 of the CBC. These regulations specify the measures to be used for excavation and trench work where workers could be exposed to unstable soil conditions. Development under the proposed VESP would be required to employ these safety measures during excavation and trenching.

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended)

For stormwater discharges associated with construction activity in the State of California, the State Water Resources Control Board (SWRCB) has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. In accordance with NPDES Phase I Permit requirements, the Construction General Permit applies to all projects in which construction activity disturbs one acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and

implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify water quality Best Management Practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

Field Act

Under the Field Act, the Department of General Services (DGS) is required to supervise the design and construction, reconstruction, or alteration of any school buildings to ensure that the plans and specifications are in compliance with adopted rules, regulations, and building standards for the protection of life and property. Within the DGS, the Division of the State Architect (DSA) is responsible for design and construction oversight for K-12 schools to ensure application of the CBC, pursuant to the Field Act. Additionally, the DSA promotes compliance with all relevant structural, accessibility, and fire and life safety codes.

Paleontological Resources

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations. Public Resources Code, Chapter 1.7, sections 5097.5 and 30244 regulate removal of paleontological resources from state lands, define unauthorized removal of fossil resources as a misdemeanor, and require mitigation of disturbed sites. Professional standards of practice, such as those adopted by the Society of Vertebrate Paleontology (SVP) Conformable Impact Mitigation Guidelines Committee (2010), offer additional guidance for the control and remediation of adverse effects on significant paleontological resources.

Local Regulations

City of Chico 2030 General Plan

The City's 2030 General Plan includes the following goal, policy, and action related to seismic and geologic hazards. The City's General Plan does not include any goals or policies that specifically address the protection of paleontological resources (City of Chico 2010):

Goal S-5: Protect lives and property from seismic and geologic hazards.

> **Policy S-3.1 (Potential Structural Damage) –** Prevent damage to new structures caused by seismic, geologic, or soil conditions.
>
> > **Action S-3.1.1 (California Building Code)** – Require all new buildings in the City to be built under the seismic requirements of the California Building Code.

Chico Municipal Code

Section 16.28.030 of the Chico Municipal Code states that application for a grading permit requires submittal of a grading plan. The grading plan shall include detailed plans, dimensions, and grading specifications. If required by the building official, a soils engineering report and/or engineering geology report must be prepared, and any recommendations included in these reports shall be a part of the grading plan submittal.

Valley's Edge Specific Plan

The VESP includes the following goals and actions related to geology, soils, and paleontological resources. The VESP includes policies and actions that would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Principles Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-5: Respect & Protect Land Heritage: Avoid, protect, and provide stewardship to the land's features and resources.

> **Action PROS-5.1** – Research, identify, document, and promote the history of the land, and the cultural and historically significant features and resources that are known to have existed and/or exist on the property.

Section 2.3.4 Chapter 6: Infrastructure and Public Facilities

Goal INFR-3: Maintain Flexibility in Stormwater Solutions: Implement and encourage advancing technologies that are compliant with the State Water Resources Control Board (SWRCB) and approved by the City.

> **Action INFR-3.2** – Maintain the latitude to employ a wide variety of techniques capable of achieving desired water quality outcomes, such as soil amendments, bioretention cells, rain gardens, disconnected roof drains, tree planting, preservation of natural vegetation and drainage courses, as may be more or less applicable based on soil characteristics of the site.

Section 2.3.6 Appendix A: Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

> **Action DES-2.8** – Soil Specific Design: Design foundations and hardscape to address the topology and soil types.

4.6.3 Impacts and Mitigation Measures

Methods of Analysis

Analysis of impacts to geology, soils, and paleontological resources are assessed by comparing existing conditions to changes that could occur associated with implementation of the proposed project. The analysis evaluates if the project would directly or indirectly result in increased exposure to health and/or safety risks associated with soil, geologic, or seismic hazards.

Impacts of the environment on a project or plan (as opposed to impacts of a project or plan on the environment) are beyond the scope of required CEQA review. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473.)

The soils, geologic conditions, and seismic hazards are assessed based on publicly available geologic/soils documents and with respect to significance within the context of Appendix G of the CEQA Guidelines, as well as the Geotechnical Report (see Appendix E). Implementation of the VESP must be consistent with the City's General Plan goals and policies, and all applicable regulations such as CBC standards. Therefore, such policies and standards are not identified as mitigation, and compliance with relevant goals, policies, and federal, state or City requirements are instead described within the impact analysis.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  ii. Strong seismic ground shaking
  iii. Seismic-related ground failure, including liquefaction
  iv. 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.
- 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.
- Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature.

Significance Threshold Criteria Not Applicable to the Proposed Project

Septic Tanks/Alternative Disposal Systems

The proposed project does not include septic tanks or any other alternative wastewater disposal systems. Therefore, there would be no impact related to the ability of soils to support the use of septic tanks or alternative wastewater disposal systems; therefore, this issue is not discussed further in this document.

Project Impacts

4.6-1 The proposed project could be affected in the event of a rupture of a known earthquake fault.

The project site is not located on any Alquist-Priolo fault zones (DOC 2015). The closest fault is the Quaternary-age Chico Monocline Fault, located 1 to 2 miles east of the project site (Appendix E). Although active, this fault is not classified as an Alquist-Priolo fault because it does not display evidence of displacement within the past 11,000 years (Hart and Bryant 2007) and therefore is not considered to present a surface rupture hazard (GEOPlus Partners 2019). Because the project site is not crossed by any known active or potentially active fault, and the nearest active fault to the project site is not an Alquist-Priolo fault, there would be **no impact** involving rupture of a known earthquake fault.

Mitigation Measures

No mitigation measures are required.

4.6-2 The proposed project could be affected by strong seismic ground shaking and secondary seismic hazards, including seismic-related ground failure and liquefaction.

As indicated in Section 4.6.1, the City of Chico and the surrounding area are relatively free from significant seismic and geologic hazards. There are, however, faults within the region and farther away that have the potential to generate substantial ground shaking on the project site, including the Holocene-active Cleveland Hill Fault. Faults located as distant as 100 miles away from Butte County have the potential to cause shaking at the project site, including the Coast Ranges Faults, the San Andreas Fault, the Midland-Sweitzer Fault, and Eastern Sierra Faults (City of Chico 2010).

In the event of a major earthquake, ground shaking could expose structures to varying levels of damage depending on distance to causative fault, intensity of the earthquake, the character of underlying soils, and depth to groundwater. As described in the setting, the site has a 10% probability of experiencing a PGA of 0.179 in the next 50 years (across all possible causative fault sources), which corresponds to strongly perceived/felt ground shaking, but light damage (CGS 2008). Although the strength of ground shaking depends on the magnitude of the earthquake, type of fault, and distance from the epicenter, all proposed development would be constructed to meet the CBC to provide increased earthquake safety for residents and visitors. As described in the setting, the geotechnical report concludes that there is a low risk of liquefaction onsite due to the lack of susceptible soils. Saturated alluvial soils that may occur along stream corridors would be kept as floodplain/open space and not be developed upon (see Figure 2-3, Land Use Plan in Chapter 2, Project Description). Therefore, the proposed project would not result in substantial adverse effects with respect to liquefaction.

Section 16.28.030 of the Chico Municipal Code states that an application for a grading permit shall include detailed plans, dimensions, and grading specifications. The application also requires submittal of a soils and/or geotechnical report if required by the building official. Any recommendations included in geotechnical or soils reports, if applicable, shall be a part of the grading plan submittal. This measure is consistent with VESP Action DES-2.8, which commits to designing foundations and hardscape specific to the site conditions and soil types. The proposed project site has been subject to a geotechnical investigation (Appendix E) and would adhere to the recommendations described in the report, including:

- Footings for single-story structures should be at least 12 inches wide; two-story and commercial structures should have minimum dimensions in accordance with CBC requirements.
- Where excavation into the lahar is not feasible, establish foundation by grouting steel rock dowels into the lahar.
- Design structures at the site in accordance with lateral force requirements set forth in Section 1613 of the CBC.

Compliance with the CBC and implementation of recommendations included in further geotechnical investigations would substantially reduce potential risks to structures and people associated with a major earthquake event. The Chico Municipal Code and the building permit process would ensure that geotechnical recommendations are incorporated into the project design to ensure building are seismically resistant and do not expose people or the project to increase risks from earthquakes. For these reasons, the impact of the project related to exposure to seismic ground shaking and secondary seismic hazards would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.6-3 The proposed project could be affected by or result in adverse effects involving landslides.

Steep slopes, in conjunction with certain soil types, can be prone to landslides. Some of the natural causes of this instability are earthquakes, weak soils, erosion, heavy rainfall, and fire. Human activities such as poor grading, excessive irrigation, and removal of vegetation can also contribute to landslides. Landslides occur in Butte County but are not common. Most landslides in Butte County occur on slopes greater than 15% and in areas that have experienced previous landslides (Butte County 2018). Slopes in excess of 15% on the proposed project site are limited to thin strips along the butte edges on either side of the stream valleys that cross the site. The project site is not mapped for landslide hazards by the Department of Conservation (DOC 2015).

During construction, cut slopes in native materials could expose a thin layer of soil overlying the lahar/conglomerate. According to Appendix E it is anticipated that fills constructed with native soil and/or bedrock would generally be stable at a 2:1 gradient, and slopes constructed of coarse fill (fill processed from lahar, cobble, boulder, and/or conglomerate) could be made stable at even steeper gradients. Revegetation with deep-rooted perennial grasses would also reduce the potential for soil erosion and sloughing. Depending on the final development plans, it is possible that some structures may be located on building pads created by cutting and filling. The transition across the cut and fill can result in slab distress in the form of cracking and settlement, due to the difference in compressibility between native rock and engineered fill. The Geotechnical Report recommends two options for incorporation into the design and construction of structures subject to this condition to reduce the potential for distress. These options include: (1) over-excavating the cut side of the site and reconstructing with engineered fill; and (2) deepening foundations on the fill portion of the site to bear the same pressure as the cut side of the site, with addition of steel reinforcement if needed. Earthwork cut and fill slopes would be constructed as recommended in the Geotechnical Report, therefore slope instability would not be a hazard for the project.

The project site does include potential hazards related to soil sloughing or rock toppling along the butte edges due to steep slopes. However, the proposed project is conscious of the site topography and leaves the steepest areas for parks and open space (See Figure 4.6-1, Site Geology and Topography; and Figure 2-3, Land Use Plan). Development would occur along relatively flat areas, while areas of steep slopes would be untouched for preservation, visual quality, and safety. Additionally, the soils at the project site are fairly shallow (4 to 14 inches for the Doemill-Jokerst soil series and 4 feet for the Clearhayes-Hamslough soil series) and thus are unlikely to pose a landslide hazard. Due to these factors, it is unlikely that there would be substantial adverse effects involving landslides. The proposed project would also comply with all design guidelines, CBC requirements, and other applicable regulations, which would further reduce potential impacts regarding landslide hazards. Thus, impacts would be considered **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.6-4 The proposed project could result in substantial soil erosion or the loss of topsoil.

As discussed in the Environmental Setting, the project site consists of shallow soils atop the Tuscan Formation. Demolition and construction activities associated with the project, including vegetation removal, excavations, and grading, would temporarily expose underlying soils, thereby increasing the potential to cause wind- and water-induced soil erosion. The effects of erosion are intensified with an increase in slope and the narrowing of runoff channels.

As the project proposes new construction in relatively flat areas and would leave steep slope areas untouched, erosion would be minimized. During construction, the project would adhere to required erosion control measures stipulated in a Stormwater Pollution Prevention Program (SWPPP), pursuant to the conditions of the Construction General Permit and National Pollution Discharge Elimination System (NPDES) discharge requirements (see Section 4.9, Hydrology, Water Quality and Drainage for further detail), consistent with Action INFR-3.2 of the VESP to achieve desired water quality outcomes. Thus, any potential erosion impacts would be reduced to levels that are **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.6-5 The proposed project could be developed on unstable soils or on soils that would become unstable as a result of the project.

Depending on the final development plans, it is possible that some structures may be located on building pads created by cutting and filling, due to the difficulty of excavation at the site. The transition across the cut and fill can result in slab distress in the form of cracking and settlement from the difference in compressibility between native rock (lahar) and engineered fill. The Geotechnical Report recommends two options for incorporation into the design and construction of structures subject to this condition to reduce distress:

- over-excavate the cut side of the site and reconstruct with engineered fill; and
- deepen foundations on the fill portion of the site to bear the same pressure as the cut side of the site, with addition of steel reinforcement if needed.

It is anticipated that fills constructed with native soil and/or bedrock would generally be stable at a 2:1 gradient, and slopes could be made stable at even steeper gradients by using coarse fill material. Revegetation with deep-rooted perennial grasses would also reduce potential of soil erosion and sloughing. Along with the recommendations described in the Geotechnical Report, the proposed project would also comply with City and VESP design guidelines, CBC requirements, and other applicable regulations, which would reduce impacts to a **less-than-significant level**.

Mitigation Measures

No mitigation measures are required.

4.6-6 The proposed project could be developed on expansive soils.

The site reconnaissance performed by GEOPlus Partners (Appendix E) determined that the site soils are typically of low to medium plasticity and very low to low expansion potential. No expansive soils or bedrock material were observed on the site. Project development would comply with the CBC, including preparation

and implementation of geotechnical investigations, which would mitigate potential risks to proposed structures associated with expansive soils. While it is unlikely any measures would be needed to mitigate expansive soils, typical actions include over-excavation of clay-rich expansive soils beneath proposed foundations and replacement with sandy, non-expansive soils. Alternatively, post-tension foundations would reduce or eliminate concrete cracking from expansive soils. These are standard construction practices necessary to comply with the CBC and applicable regulations and would ensure that impacts related to expansive soils would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.6-7 The proposed project could destroy a paleontological resource or unique geologic feature.

The Pliocene-age Tuscan Formation unit C (Ttc) is mapped within the project area boundaries. As described in Section 4.6.1, Environmental Setting, the Tuscan Formation was deposited as a series of volcanic mudflows. Due to the destructive nature of geologic formations that are volcanic in origin, the chance of encountering paleontological resources at the site is considered low. Nevertheless, the project site is largely undeveloped and has not been through significant ground-disturbing activities or excavation. The City's General Plan EIR noted that the University of California Museum of Paleontology collections database indicated that 126 sites with the fossilized remains of plants, invertebrates, and mammals have been discovered in the Chico Planning Area (City of Chico 2010). A more recent records search of the Museum of Paleontology identified 137 fossils from Butte County in their collections database (UCMP 2020), most of which were within marine formations, with no specimens in the database related to the Tuscan Formation. Given that the project site has never been disturbed and fossils have been identified within the City and County, it is possible that site disturbance and excavation could reveal unique, previously unknown paleontological resources. This would be a **potentially significant impact**.

Mitigation Measures

Compliance with Mitigation Measure GEO-1 would ensure that any unique paleontological resources unearthed during project construction would be assessed, documented, and preserved, thus reducing the impact to a **less-than-significant level**.

GEO-1: **Unanticipated Discovery.** Project developers/contractor(s) shall inform construction workers (site clearing, grading and trenching) of the sensitivity of the project site for paleontological resources. In the event that known or suspected paleontological resources (e.g., fossils) are unearthed during grading and site excavation, the area of discovery shall be roped off with a 50-foot radius buffer and remain off-limits until cleared by a qualified paleontologist. The applicant or their contractor shall retain a qualified paleontologist that meets the Society of Vertebrate Paleontology (SVP) (2010) guidelines, who shall document the nature, location, and taxa of the find. The qualified paleontologist shall make recommendations for the treatment of the discovery. Measures may include monitoring, recording the fossil locality, data recovery and analysis, a final report, and accessioning the fossil material and technical report to a paleontological repository. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City for review. If paleontological materials are recovered, this report also shall be submitted to a

paleontological repository such as the University of California, Museum of Paleontology, along with significant paleontological materials. Once documentation and collection of the find is completed, the paleontologist shall remove the rope and allow construction to recommence in the area of the find.

Cumulative Impacts

The geographic scope for the analysis of cumulative geologic and soils-related impacts consists of the proposed project site, as these impacts depend on the site-specific conditions and features on the project site, such as soil composition and topography. These site-specific impacts would not combine to create cumulative impacts with other projects occurring elsewhere in the City. Therefore, the project would not have the potential to contribute to an existing cumulative impact.

The geographic scope for the analysis of cumulative paleontological impacts consists of development slated to occur within the City or the County on soils identified as the Tuscan Formation geologic unit. Cumulative impacts on paleontological resources consider whether the impacts of the proposed project together with other related projects substantially diminish the number of paleontological resources within the same or similar context or property type.

4.6-8 The proposed project could result in a cumulative impact related to loss of paleontological resources.

As discussed under Impact 4.6-7, the chance of encountering paleontological resources at the site is considered low due to the volcanic nature of the Tuscan Formation that underlies the project site. Fossils have been found within Butte County (UCMP 2020), most of which were within marine formations, with no specimens in the database related to the Tuscan Formation. However, many areas underlain by the Tuscan Formation are currently undeveloped, including the VESP area. It is possible that construction of the proposed project in combination with other cumulative projects in undeveloped areas underlain by the Tuscan Formation could disturb multiple unknown unique paleontological resources within this formation. Although unlikely to occur because of the low potential for the Tuscan Formation to contain paleontological resources, this could result in a **potentially significant cumulative** impact to which the project would make a cumulatively significant incremental contribution.

Mitigation Measures

See Mitigation Measure GEO-1. Compliance with this measure would ensure proper steps are taken in the event paleontological resources are unearthed during construction to protect the resource and reduce the project's cumulative contribution to **less-than-cumulatively considerable**.

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4.7 Greenhouse Gases

4.7.0 Introduction

This section describes the existing greenhouse gas (GHG) conditions present within the proposed Valley's Edge Specific Plan (proposed project or VESP) area and in the vicinity, identifies associated regulatory requirements, and evaluates potential impacts of the proposed project with respect to consistency with applicable plans that address reducing GHG emissions, and the generation of GHG emissions.

Comments received in response to the Notice of Preparation (NOP) included comments from the public and the Butte County Air Quality Management District (BCAQMD). Specific comments included a recommendation that the proposed project's construction and operational GHG emissions be estimated and impacts addressed. In addition, it was requested that the latest version of the California Emissions Estimator Model (CalEEMod) be used since the proposed project exceeds the screening size provided within the *2014 CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review*. The current version of CalEEMod was used (2020.4.0). Another comment requested sustainable features be identified. Furthermore, concerns regarding the cumulative effects on climate change coupled with other approved and/or active developments are discussed. All of these concerns are addressed in this section. The NOP and comments received are included in Appendix A.

The primary sources reviewed to prepare this section include the 2017 update to the City of Chico 2030 General Plan, the City's 2021 Climate Action Plan (CAP) Update, the BCAQMD *2014 CEQA Air Quality Handbook*, and information from the City of Chico.

4.7.1 Environmental Setting

Climate Change Overview

Climate change refers to any significant change in measures of climate—such as temperature, precipitation, or wind patterns—lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017).

The greenhouse effect is the trapping and buildup of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a three-part process as follows: Short-wave radiation emitted by the sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. However, recent climate changes, in particular the warming observed over the past century, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of warming since the mid-twentieth century and are the most significant driver of observed climate change (IPCC 2013; EPA 2017). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system.

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code, section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride. (See also State CEQA Guidelines, Section 15364.5.)[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities; it is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 include the combustion of fuels such as coal, oil, natural gas, and wood, and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

1 Climate forcing substances include GHGs and other substances such as black carbon and aerosols.

2 The descriptions of GHGs are summarized from the IPCC Fourth Assessment Report (2007), CARB's "Glossary of Terms Used in GHG Inventories" (2018), and EPA's "Climate Change" (2017).

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2017). The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

Notably, this analysis assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

Sources of Greenhouse Gas Emissions

Per the 2019 U.S. Environmental Protection Agency (EPA) Inventory of U.S. GHG Emissions and Sinks: 1990–2017, total U.S. GHG emissions were approximately 6,457 million metric tons (MMT) of CO_2e in 2017 (EPA 2019). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (6,457 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.2% of CO_2 emissions in 2017 (4,912.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2017 are 1.3% higher; however, the gross emissions are down from a high of 15.7% above the 1990 level that occurred in 2007. GHG emissions decreased from 2016 to 2017 by 0.5% (35.5 MMT CO_2e) and, overall, net emissions in 2017were 13% below 2005 levels (EPA 2019).

According to California's 2000–2017 GHG emissions inventory (2019 edition), California emitted 351 MMT CO_2e in 2017, including emissions resulting from out-of-state electrical generation (CARB 2019). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. Table 4.7-1 presents California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2017.

Table 4.7-1. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO2e)	Percent of Total [a]
Transportation	169.86	40%
Industrial uses[b]	89.40	21%
Electricity generation[c]	62.39	15%
Residential and commercial uses	41.14	10%
Agriculture	32.42	8%
High GWP substances	19.99	5%
Recycling and waste	8.89	2%
Total	**424.09**	**100%**

Source: CARB 2019.
Notes: GHG = greenhouse gas; MMT CO2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2017 California GHG inventory.

[a] Percentage of total has been rounded and total may not sum due to rounding.
[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO2e of unanticipated emissions in 2015 and 0.53 MMT CO2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
[c] Includes emissions associated with imported electricity, which account for 23.94 MMT CO2e.

Between 2000 and 2017, per capita GHG emissions in California have dropped from a peak of 14.1 MT per person in 2001 to 10.7 MT per person in 2017, representing a 24% decrease. In addition, total GHG emissions in 2017 were approximately 5 MMT CO_2e less than 2017 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO_2e (CARB 2019).

Table 4.7-2 presents the City's 2017 baseline GHG emissions and the percent contribution of each emissions source (energy, transportation, and solid waste).

Table 4.7-2. City of Chico Baseline Greenhouse Gas Emissions Inventory (2017)

Emissions Source	Annual GHG Emissions (MT CO2e/year)	Percent of Total
Transportation – Gasoline	181,031.0	38.8%
Transportation – Diesel	101,854.1	21.8%
Commercial – Electricity	32,657.6	7.0%
Commercial – Natural Gas	31,925.8	6.8%
Residential – Electricity	30,757.0	6.6%
Residential – Natural Gas	64,768.9	13.9%
Solid Waste	23,371.8	5.0%
	Total	**100%**

Source: City of Chico 2020.
Notes: GHG = greenhouse gas; MT CO2e = metric tons of carbon dioxide equivalent per year.

As shown on Table 4.7-2, the primary generators of GHGs within the City were attributed to transportation and energy, accounting for 61% and 34% of the City's GHG emissions in 2017, respectively.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a rise in average global tropospheric temperature. Reflecting the long-term warming trend since pre-industrial times, observed global mean surface temperature for the decade 2006–2015 was 0.87°C, or likely between 33.35°F and 33.78°C, higher than the average over the 1850–1900 period (IPCC 2018). Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Human activities are estimated to have caused

approximately 1.0°C (1.8 degrees Fahrenheit (°F)) of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C (1.4°F to 2.2°F) (IPCC 2018). Global warming is likely to reach 1.5°C (2.7°F) between 2030 and 2052 if it continues to increase at the current rate (IPCC 2018).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting the state. The Office of Environmental Health Hazard Assessment identified various indicators of climate change in California, which are scientifically-based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring within the state and is having significant, measurable impacts. Changes in the state's climate have been observed including an increase in annual average air temperature with record warmth from 2012 to 2016, more frequent extreme heat events, more extreme drought, a decline in winter chill, an increase in cooling degree days and a decrease in heating degree days, and an increase in variability of statewide precipitation (OEHHA 2018).

Warming temperatures and changing precipitation patterns have altered California's physical systems – the ocean, lakes, rivers and snowpack – upon which the state depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the state's annual water supply. Impacts of climate on physical systems have been observed such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters (OEHHA 2018).

Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed including climate change impacts on terrestrial, marine, and freshwater ecosystems. As with global observations, species responses include those consistent with warming: elevational or latitudinal shifts in range, changes in the timing of key plant and animal life cycle events, and changes in the abundance of species and in community composition. Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses a threat to public health as warming temperatures and changes in precipitation can affect vector-borne pathogen transmission and disease patterns in California as well as the variability of heat-related deaths and illnesses. In addition, since 1950, the area burned by wildfires each year has been increasing.

The California Natural Resources Agency (CNRA) has released four California Climate Change Assessments (2006, 2009, 2012, and 2018), which have addressed the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming. To address local and regional governments need for information to support action in their communities, the Fourth Assessment (2018) includes reports for nine regions of the state, including the Sacramento Valley Region, where the proposed project is located. Key projected climate changes for the Sacramento Valley Region include the following (CNRA 2018):

- Continued future warming over the Sacramento Valley Region. Across the region, average maximum temperatures are projected to increase around 2.7°F to 10.8°F by the late century.
- Extreme temperatures are also expected to increase. The hottest day of the year may be up to 10°F warmer for many locations across the Sacramento Valley Region by the late century under certain model scenarios. The number of extremely hot days is also expected to increase across the region.

- In the Sacramento Valley Region, annual precipitation is expected to remain about the same on average or would increase slightly this century while dry and wet extremes are both expected to increase. The Southern Sierras are partially buffered against rising temperatures by their higher elevation but are still expected to have declines in total snow water of about 40% by the end-of-century, with the greatest losses at lower elevations.
- Tule fog during the winter season has important implications for crops and ecosystems. Reductions in Tule fog have been observed in recent years because conditions have been either too wet or too dry for fog to form.
- Wet winters and drier summers are likely to increase summer and fall wildfire activity. Wet winters increase plant growth, which increases the amount of fuel for wildfire in the spring and summer months. Increases in large wildfires are posited to be driven by an earlier spring season and less summer moisture.

4.7.2 Regulatory Setting

Federal Regulations

Massachusetts v. U.S. Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency*, the U.S. Supreme Court ruled that CO_2 was a pollutant and directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The elevated concentrations of GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The combined emissions of GHGs—CO_2, CH_4, N_2O, and hydrofluorocarbons—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the act would do the following to aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel by 2022.
2. Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel

economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and National Highway Traffic Safety Administration Joint Final Rule for Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2%–3% of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at this time.

On September 27, 2019, EPA and NHTSA published the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program." (84 Fed. Reg. 51,310), which became effective November 26, 2019. On March 31, 2020, the EPA and NHTSA issued Part Two of the SAFE Rule, which went into effect 60 days after being published in the Federal Register. On February 8, 2021, the D.C. Circuit Court issued an order granting

the Biden administration's motion to stay litigation over Part 1 of the Trump-era SAFE Rule. The order was issued in the *Union of Concerned Scientists v. NHTSA* (No. 19-1230) and consolidated cases. Part 1 of the SAFE Rule rescinded the waiver EPA granted California to regulate vehicle GHG emissions and to implement a zero-emission vehicle program. Part 2 of the SAFE Rule finalized new standards for Corporate Average Fuel Economy (CAFE) and carbon dioxide emissions for passenger vehicles and light-duty trucks sold from model years 2021 through 2026.

This stay is one of the first of many that will likely be requested by the Biden administration in litigation challenging Trump-era rules. Consistent with President Biden's executive order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, EPA and NHTSA are now evaluating whether and how to replace the SAFE Rule. The litigation is not expected to be resolved for at least several months and is currently ongoing.

State Regulations

The statewide GHG emissions regulatory framework is summarized as follows by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders (EOs), assembly bills (ABs), senate bills (SBs), and other regulations and plans that would directly or indirectly reduce GHG emissions. The state's adoption and implementation of various legislation demonstrates California's leadership in addressing the critical challenge of addressing climate change. Of importance, the proposed project and/or users of the proposed project would be required to comply with the various regulatory measures that would reduce GHG emissions, which would reduce the proposed project's contribution to cumulative GHG emissions and associated climate change impacts.

The state has taken a number of actions to address climate change. These include EOs, legislation, and CARB plans and requirements. These are summarized as follows.

EO S-3-05. EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80% below 1990 levels

AB 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030.

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
2. Achieving a statewide renewable energy mix of 33%.
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (17 CCR 95480 et seq.).
6. Creating targeted fees, including a public goods charge on water use, fees on high-GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including: energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent global warming potentials identified by the IPCC, from 427 MMT CO_2e to 431 MMT CO_2e (CARB 2014).

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB adopted the *2017 Climate Change Scoping Plan Update* (2030 Scoping Plan) (CARB 2017a). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2e per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Global Climate Leadership Memorandum of Understanding (Under 2 MOU) and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below two degrees Celsius. The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans (CAPs)) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project level review where there is a legally adequate CAP.[3]

The 2030 Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and EO S-3-05, and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with every planning policy or goal to be consistent. Rather, a project would be consistent if it furthers the objectives and does not obstruct their attainment.

EO B-18-12. EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

[3] *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05.

EO B-55-18. EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality no later than 2045, and achieve and maintain net negative emissions thereafter.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402(b)(1)). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402(d)) and cost effectiveness (California Public Resources Code, Sections 25402(b)(2) and (b)(3)). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2019 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2020. The 2019 Title 24 Building Energy Efficiency Standards will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Non-residential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as California's Green Building Standards (CALGreen), and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance

- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwashers; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: (1) federal and state standards for federally regulated appliances, (2) state standards for federally regulated appliances, and (3) state standards for non-federally regulated appliances.

Renewable Energy and Energy Procurement

SB 1078, EO S-14-08, SBX1-2, SB 350, and SB 100. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. EO S-14-08 (November 2008) required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. SB X1 2 expanded the RPS by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by

December 31, 2020, and in subsequent years. SB 350 (October 2015) further expanded the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California by 2045.

Mobile Sources

AB 1493. AB 1493 (Pavley) (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

EO S-1-07. EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining Low Carbon Fuel Standard (LCFS) for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.).

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB.

In September 2010, CARB adopted the first SB 375 targets for the regional metropolitan planning organizations. The targets for the Butte County Association of Governments (BCAG) are a 1% increase in emissions per capita by 2020 and a 1% increase by 2035. Achieving these goals through adoption of a SCS is the responsibility of the metropolitan planning organizations. On December 8, 2016, the BCAG Regional Council adopted the 2016 RTP/SCS, which builds upon the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified a 6% reduction by 2020 and a 7% reduction by 2030 (BCAG 2016). In December 2016, CARB accepted BCAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve BCAG targets

Advanced Clean Cars Program and Zero-Emissions Vehicle (ZEV) Program

The Advanced Clean Cars program (January 2012) is a new emissions-control program for vehicle model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in

conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

EO B-16-12. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve established goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

AB 1236. AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based upon substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provided for appeal of that decision to the planning commission, as specified. The bill provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of electric vehicle charging stations is a matter of statewide concern. The bill required electric vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric vehicle charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017. At the time of this analysis, the City of Chico has not adopted an ordinance in compliance with AB 1236.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (Cal. Pub. Resources Code, § 40000 *et seq*.), was passed because of the increase in waste stream and the decrease in landfill capacity. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000. AB 341 (Chapter 476, Statutes of 2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter.

AB 341. (Chapter 476, Statutes of 2011 (Chesbro)) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops and in August 2015 published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations and an evaluation of program effectiveness (CalRecycle 2015).

AB 1826. Chesbro (Chapter 727, Statutes of 2014, effective 2016) requires businesses to recycle their organic waste (i.e., food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste) depending on the amount of waste they generate per week. This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. The minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply.

Other State Actions

SB 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4(a)). The Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)). The Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a). Neither the Butte County Air Quality Management District (BCAQMD) nor the City have adopted GHG emissions thresholds.

With respect to GHG emissions, the CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4(a)). Section 15064.4(b) states that the lead agency

should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final *2009 California Climate Adaptation Strategy* report was issued in December 2009 (CNRA 2009b), and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016 (CNRA 2016). In January 2018, the CNRA released the *Safeguarding California Plan: 2018 Update,* which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018).

Local Regulations

Butte County Air Quality Management District

California has 35 Air Pollution Control Districts and Air Quality Management Districts, many of which are currently addressing climate change issues by developing significance thresholds, performance standards, and mitigation measures. The BCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the County where the proposed project is located. The BCAQMD has not adopted a post-2020 GHG emissions threshold to evaluate a project's GHG emissions.

As such, in order to determine whether the proposed project's GHG emissions would have a significant effect on the environment, this EIR uses the City's reduction target of 2.76 MT CO_2e per capita per year identified in the City's 2021 CAP Update (City of Chico 2021).

Butte County Association of Governments

The BCAG region includes all local governments within Butte County. BCAG is responsible for the development of federal and state transportation plans and programs that secure funding for transportation improvements in the County. BCAG adopted the 2016 RTP/SCS in November 2016. The 2016 RTP/SCS sets a regional target of a 6% reduction in per capita GHG emissions for the planning year 2020 and a 7% reduction in per capita GHG emissions in planning year 2035, as compared to baseline per capita emissions levels in 2005. The 2016 MTP/SCS outlines the region's proposed transportation network, emphasizing multimodal system enhancements, system preservation, and improved access to high quality transit, as well as land use development that complements this transportation network (BCAG 2016). In December 2016, CARB accepted BCAG's determination that the 2016 RTP/SCS would meet the region's GHG reduction targets. BCAG is initiating the development of the new 2020 RTP/SCS, which is slated to be released Fall 2020.

City of Chico Climate Action Plan

In 2011, the City adopted its CAP to reduce GHG emissions within the City in order to meet the state's goal as recommended in the AB 32 Scoping Plan of reducing GHG emissions 25% below the 2005 baseline levels by 2020 (City of Chico 2012). In April 2020, the City of Chico finalized an updated to their GHG inventory and forecast from 1990 to 2045 in order to support the City's CAP Update. The City has reduced overall GHG emissions by 27% despite a 27% increase in population (City of Chico 2020). Major reductions were seen in the energy and transportation sectors. Reductions in the transportation sector were driven primarily by reductions in diesel and gasoline consumption, whereas reductions in the energy sector were driven entirely by a reduction in emission factors, despite little change in actual electricity usage. Due to the significant population increase between 2005 and 2017, per capita emissions have seen an overall 42% decrease from 8.8 MT CO_2e per person in 2005 to 5.07 MT CO_2e per person in 2017. Mass emissions also decreased by 27% between 2005 and 2017 exceeding the 2020 CAP reduction target of 25% below 2005 levels by 2020 (City of Chico 2020).

As part of the effort to ensure a sustainable future, the City adopted a CAP Update in 2021, including a GHG emissions inventory and forecast. The CAP Update is intended to guide the City towards reducing GHG emissions consistent with the state goal to reduce GHG emissions 40% below 1990 levels by 2030, established by SB 32, and will make substantial progress toward meeting the state's long term goal of carbon neutrality by 2045, established by EO B-55-18. Under CEQA, local agencies must evaluate the environmental impacts of new development projects, including impacts from GHG emissions associated with construction and operation. Per CEQA Guidelines Section 15183.5(b), a qualified GHG reduction plan must:

- Quantify existing and projected GHG emissions within the plan area.
- Establish a reduction target based on SB 32.
- Identify and analyze sector specific GHG emissions from Plan activities.
- Specify policies and actions (measures) that local jurisdictions will enact and implement over time to achieve a specified reduction target.
- Establish a tool to monitor progress and amend if necessary. Adopt in a public process following environmental review.

The 2021 CAP Update fulfills these requirements and is therefore a "qualified" GHG reduction plan per CEQA.

The CAP Update adopts a GHG emissions target for 2030, and a long-term GHG emissions goal for 2045. The City's targets are to reduce mass emissions 45% below 1990 levels by 2030 and to achieve carbon neutrality by 2045. The adopted 2030 target therefore exceeds SB 32 by 5% and aligns with the state's long-term GHG reduction goal for 2045. These goals result in quantified emissions targets of 2.76 MT CO_2e per capita per year for year 2030 and 0 MT CO_2e capita per year for 2045 (City of Chico 2021). The City's CAP Update uses a per-capita metric to allow for population growth in the City consistent with 2019 "medium scenario" population estimates from BCAG (which includes population re-distribution estimates resulting from the Camp Fire in 2018). In absolute terms, the 2030 target of 2.76 MT CO_2e per person is based on citywide GHG emissions of 297,386 MT CO_2e.

To calculate the City's targets, the CAP Update accounts for statewide legislation and policies that are anticipated to reduce average emissions by approximately 1.4 MT CO_2e per person by 2030 and would continue through 2045 to provide an estimated total reduction of 2.01 MT CO2e per person. These state

legislation efforts and policies include Title 24 Energy Efficiency Standards, the Advanced Clean Cars Program, and RPS program described above. Most emissions reductions forecast from statewide programs would come from the Advanced Clean Cars and zero emission vehicle or ZEV programs.

Relative to the existing emissions rate of approximately 5.07 MT CO_2e per person, the identified statewide efforts leave 0.91 MT CO2e per person for the City to eliminate by 2030 (5.07 – 1.4 – 0.91 = 2.76). The City's CAP Update includes measures to reduce this amount of GHG emissions by including a variety of measures related to energy, transportation, waste, sequestration, and education/outreach. Implementation of the most critical measures has already begun, and the efforts will continue and expand over the next several years, with bi-annual status updates, GHG Inventory monitoring, and a major check-in planned for 2025.

The CAP Update establishes a robust framework for helping the City achieve its 2030 targets while accommodating growth, however, federal, state, and local efforts contemplated 15 to25 years into the future are too speculative to support definitive statements. Continuing current efforts and meeting the City's 2030 goal will, nonetheless, represent important progress toward achieving its goal of carbon neutrality by 2045.

City of Chico 2030 General Plan

The City of Chico 2030 General Plan (City of Chico 2017) includes various goals, policies, and actions related to reducing GHGs (both directly and indirectly). Applicable goals, policies, and actions include the following:

Sustainability Element

Goal SUS-4: Promote green development.

Policy SUS-4.2 (Water Efficient Landscaping) – Promote drought tolerant landscaping.

Policy SUS-4.3 (Green Development Practices) – Promote green development practices in private projects.

> **Action SUS-4.3.1 (Green Development Checklist) –** Include a Green Development Checklist and supporting materials with City planning and building applications and permits highlighting ways to incorporate green development principles into project design.
>
> **Action SUS-4.3.3 (Reduce Heat Gain) –** Establish standards for new non-residential structures, such as reflective roofing or light colored pavement to reduce the heat gain associated with traditional urban development.

Goal SUS-5: Increase energy efficiency and reduce non-renewable energy and resource consumption Citywide.

> **Policy SUS-5.2 (Energy Efficient Design) –** Support the inclusion of energy efficient design and renewable energy technologies in public and private projects.
>
> > **Action SUS-5.2.1 (Integration of Energy Efficiency Technology) –** Utilize City incentives identified in Action LU-2.3.1 to encourage the integration of energy efficiency measures and renewable energy devices, in addition to those required by the state, during early project review.

Goal SUS-6: Reduce the level of greenhouse gas emissions Citywide.

> **Policy SUS-6.3 (Greenhouse Gas Emissions and CEQA) –** Analyze and mitigate potentially significant increases in greenhouse gas emissions during project review, pursuant to CEQA.

Policy SUS-6.4 (Community Trees) – Continue to support the planting and maintenance of trees in the community to increase carbon sequestration.

Circulation Element

Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.

Policy CIRC-1.2 (Project-level Circulation Improvements) – Require new development to finance and construct internal and adjacent roadway circulation improvements as necessary to mitigate project impacts, including roadway, transit, pedestrian, and bicycle facilities.

Policy CIRC-1.5 (Vehicle Miles Travelled Analysis) – Consistent with State law, implement Vehicle Miles Travelled (VMT) assessments as part of the environmental review process under CEQA.

Action CIRC-1.5.1 (VMT CEQA Analysis) – For projects that require a full traffic analysis as part of the CEQA review process, perform a VMT analysis consistent with the California Office of Planning and Research CEQA Guidelines.

Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.

Policy CIRC-2.1 (Complete Streets Standards) – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and GHG emissions; and reinforces the role of the street as a public space that unites the City.

Action CIRC-2.1.1 (Complete Streets Standards) - With consideration of street classification and function, design new streets to accommodate all modes of travel, including transit, bicycles, pedestrians, vehicles and parking.

Action CIRC-2.1.3 (Multimodal Connections) – Provide connections between and within existing and new neighborhoods for bicycles, pedestrians, and automobiles.

Policy CIRC-2.2 (Circulation Connectivity and Efficiency) – Provide greater street connectivity and efficiency for all transportation modes.

Action CIRC-2.2.1 (Connectivity in Project Review) – New development shall include the following internal circulation features:

- A grid or modified grid-based primary street system. Cul-de-sacs are discouraged, but may be approved in situations where difficult site planning issues, such as odd lot size, topography, or physical constraints exist or where their use results in a more efficient use of land, however in all cases the overall grid pattern of streets should be maintained;
- Traffic-calming measures, where appropriate;
- Roundabouts as alternative intersection controls, where appropriate;
- Bicycle and pedestrian connections to adjacent streets, trails, public-spaces, and bicycle paths; and
- Short block lengths consistent with City design standards.

Action CIRC-2.2.2 (Traffic Management) – Perform routine, ongoing evaluation of the street traffic control system, with emphasis on traffic management, such as signal timing and coordination or the use of roundabouts, to optimize traffic flow along arterial corridors and reduce vehicle emissions.

Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.

Policy CIRC-3.3 (New Development and Bikeway Connections) – Ensure that new residential and non-residential development projects provide connections to the nearest bikeways.

Action CIRC-3.3.1 (Bikeway Requirements) – Require pedestrian and bicycle connections to the Citywide bikeway system every 500 feet, where feasible, as part of project approval and as identified in the Bicycle Master Plan.

Policy CIRC-3.4 (Bicycle Safety) – Improve safety conditions, efficiency, and comfort for bicyclists through traffic engineering, maintenance and law enforcement.

Action CIRC-3.4.2 (Signage, Markings, and Lighting) – Continue to provide signage and markings to warn vehicular traffic of the existence of merging or crossing bicycle traffic where bikeways make transitions into or across roadways. Delineate and sign bikeways in accordance with Caltrans' standards and install, where feasible, lighting for safety and comfort.

Action CIRC-3.4.4 (Bicycle Detection at Traffic Signals) – Continue to install bicycle detectors at high volume bicycle/automobile intersections that have actuated signals.

Policy CIRC-3.6 (Bicycle Parking) – Provide safe and secure bicycle parking and support facilities.

Action CIRC-3.6.1 (Bicycle Parking and Facilities) – Maintain standards in the Municipal Code for bicycle parking and bicycle-support facilities.

Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.

Policy CIRC-4.1 (Pedestrian Master Planning) – Continue to integrate and highlight pedestrian access and dual use bicycle and pedestrian pathways in the Bicycle Master Plan.

Policy CIRC-4.2 (Continuous Network) – Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.

Policy CIRC-4.3 (Pedestrian-Friendly Streets) – Ensure that streets in areas with high levels of pedestrian activity, such as near schools, employment centers, residential areas, and mixed-use areas, support safe pedestrian travel by providing elements such as detached sidewalks, bulb-outs, on-street parking, enhanced pedestrian crossings, and medians.

Action CIRC-4.3.1 (Safe Pedestrian Crossings) – As funding allows, improve pedestrian safety at intersections and other crossing locations by providing safe, well-marked pedestrian crossings, bulb-outs, on-street parking, audible warnings, or median refuges that reduce crossing widths.

Action CIRC-4.3.2 (Expand Sidewalk Infrastructure) – As funding allows, continue installation of sidewalk and pedestrian-related infrastructure in areas not currently served.

Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.

Policy CIRC-5.3 (Transit Connectivity in Projects) – Ensure that new development supports public transit.

Action CIRC-5.3.1 (Roadway Transit Facilities) – When planning or retrofitting roadways, consult with BCAG regarding the inclusion of transit stops, shelters, bus turnouts, and other transit improvements.

Action CIRC-5.3.2 (Roadway Improvements for New Development) – During project review, consult with BCAG to determine appropriate requirements for the installation of stops and streetscape improvements, if needed to accommodate transit.

Goal CIRC-9: Reduce the use of single-occupant motor vehicles.

Policy CIRC-9.1 (Reduce Peak-Hour Trips) – Strive to reduce single occupant vehicle trips through the use of travel demand management strategies.

Action CIRC-9.1.2 (Existing Employer Trip Reduction Programs) – Encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, and preferential parking for carpools/vanpools.

Action CIRC-9.1.3 (New Employer Trip Reduction Programs) – As a condition of project approval, require new non-residential projects that will employ more than 100 people to submit a Travel Demand Management Plan that identifies strategies, such as those listed in Action CIRC-9.1.2, to reduce single occupancy vehicle trips.

Policy CIRC-9.3 (Emphasize Trip Reduction) – Emphasize automotive trip reduction in the design, review, and approval of public and private development.

Community Design Element

Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.

Policy CD-3.2 (Bicycle and Pedestrians) – Maintain and enhance the pedestrian- and bicycle-friendly environment of Chico.

Action CD-3.2.1 (Pedestrian-Scale Site Planning) – Utilize design techniques provided in the City's Design Guidelines Manual that support pedestrian- and bicycle-friendly site planning.

Policy CD-3.3 (Pedestrian Environment and Amenities) – Locate parking areas and design public spaces within commercial and mixed-use projects in a manner that promotes pedestrian activity.

Goal H.7: Encourage energy efficiency in housing.

Policy H.7.1 – Continue to enforce energy standards required by the State Energy Building Regulations and California Building Code, and reduce long-term housing costs through planning and applying energy conservation measures.

Goal PPFS-5: Maintain a sustainable supply of high quality water, delivered through an efficient water system to support Chico's existing and future population, including fire suppression efforts.

Policy PPFS-5.3 (Water Conservation) – Work with Cal Water to implement water conservation management practices.

Action PPFS-5.3.2 (Water Reuse) – Encourage new development to install water conserving irrigation systems such as grey water systems.

Goal PPFS-8: Ensure that solid waste and recyclable collection services are available to City residents.

Policy PPFS-8.1 (Waste Recycling) – Provide solid waste collection services that meet or exceed state requirements for source reduction, diversion, and recycling.

Action PPFS-8.1.1 (Green Waste) – Encourage recycling, composting, and organic waste diversion within the City and continue providing green yard waste recycling services, seasonal leaf collection and street sweeping services.

Action PPFS-8.1.6 (Recyclable Construction Materials) – Use the Green Building Checklist to encourage the use of recyclable materials in new construction.

Action PPFS-8.1.7 (Commercial and Industrial Recycling) – Require compliance with the State-wide Mandatory Commercial Recycling requirements for commercial and industrial customers.

Goal OS-3: Conserve water resources and improve water quality.

Policy OS-3.3 (Water Conservation and Reclamation) – Encourage water conservation and the reuse of water.

Action OS-3.3.1 (Water Conservation Program Funding) – Work with the California Water Service Company to implement a water conservation program to reduce per capita water use 20% by 2020 pursuant to the requirements of the State Water Plan.

Action OS-3.3.2 (Reduce the Use of Turf) – Limit the use of turf on landscape medians, parkways, and other common areas in favor of native and drought tolerant ground cover, mulch, and other landscaping design elements, and support the conversion of existing turf to less water-intensive ground cover types.

Action OS-3.3.3 (Parkway Irrigation) – Design and monitor irrigation systems in medians and parkways to maximize efficiency and minimize nuisance run-off.

Action OS-3.3.5 (Water Efficient Landscape Irrigation) – Enforce the requirements of state water conservation legislation when reviewing landscaping plans for new projects.

Goal S-9: Protect the community from risks posed by climate change.

Policy S-9.1 (Climate Adaptation and Resiliency) – Promote public safety through the development of climate adaptation and resiliency strategies to reduce risks associated with climate change.

Action S-9.1.1 (Climate Change Adaptation) – Update the Safety Element or the City's Local Hazard Mitigation Plan to include climate adaptation and resiliency strategies consistent with Senate Bill 379, including preparation of: 1) a vulnerability assessment that identifies community risks associated with climate change; 2) a set of adaptation and resilience goals, policies, and objectives for the protection of the community; and 3) implementation measures to avoid or minimize climate change impacts.

Valley's Edge Specific Plan

The VESP includes the following goals, policies, or actions related to reducing GHGs. The VESP policies and actions would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Principles Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-3: **Promote Outdoor Recreation & Complement Bidwell Park:** Promote outdoor recreation by creating space and facilities which foster, play, exercise, adventure, and social interaction. Strive to complement Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

> **Action PROS-3.1** – Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.
>
> **Action PROS-3.5** – Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan area are within 350 yards of a park, trail, or open space element.
>
> **Action PROS-3.6** – Identify suitable land along the plan area's western boundary to accommodate a small lake for recreational purposes, located as to enhanced foreground views and encourage pedestrian, bike usage, while still accommodating vehicular access and parking.
>
> **Action PROS-3.8** – Create and maintain no less than 20 miles of open space biking, hiking, and multi-use trails for recreation, play, exercise, and non-motorized transit.

Goal PROS-4: Preserve Natural & Environmental Resources and Restore Sensitive Habitat: Utilize "avoidance by design" strategies and open space to preserve sensitive habitat, safeguard natural drainages, increase bio-diversity, provide for wildlife movement, and protect wetlands and riparian corridors previously degraded by a century of grazing.

> **Action PROS-4.2** – Utilize native, drought tolerant, and fire resistant landscape design and plantings in parks, streetscapes, and common areas.

Section 2.3.2 Chapter 4: Land Use

Goal LU-2: Balance Growth and Conservation: Balance growth and conservation by reinforcing the City's compact urban form, by establishing urban grow limits, by managing where and how growth and conservation will occur, in addition to responding to Chico's housing demand, rental units, and commercial space in a responsible and comprehensive planned manner.

> **Action LU-2.2** – Ensure development is consistent with the City of Chico Climate Action Plan.
>
> **Acton LU-2.8** – Promote walkability by locating multi-family areas next to Village Core, community clubhouse, community park, and elementary school, all served by a Class I trail network.

Section 2.3.3 Chapter 5: Circulation and Trails

Goal C-1: Multi-modal Circulation and Minimize Greenhouse Gas (GHG) Impacts. Minimize GHG impacts by providing a variety of transportation choices and incorporating features that result in vehicular trip reduction.

Action C-1.1 – Create a network of bike and pedestrian trails that connects the community, enables safe and convenient access between land uses and places of interest, fosters healthy outdoor experiences, and reduces automobile reliance.

Action C-1.2 – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and GHG emissions; and reinforces the role of the street a public space that units the community.

Action C-1.3 – Promote non-vehicular travel by creating a network of Class I trails and improved surface trails that caters to residents' and children daily travel trips, safe and efficient routes of travel between residential areas and school, parks, shopping areas, services and employment areas.

Action C-1.4 – Promote increased trail usage by ensuring that 100% of the homes are within 350 yards of a connection to the overall trail network.

Action C-1.5 – Promote and encourage neighborhood electric vehicles (NEV's) by designing all roadways to accommodate their use.

Action C-1.6 – Minimize travel distance and transit efficiency by locating land uses servicing the broader Chico community at the westerly edge of the plan area, directly accessible from the main collector roadway and the Class I trail system facilitating on and off-site connectivity.

Action C-1.7 – Promote electric vehicle usage by providing EV charging stations in public parking lots and in all multi-family projects, by providing 240V outlet in no less than 50% of all garaged residential units, and by supporting electric bike and scooter rental services (e.g. Lime, Bird).

Action C-1.8 – Promote the use of bicycles as modal transportation by designing streetscapes and rest areas to provide shade, and by designing bike lanes, intersections, and roundabouts to enable safe passage.

Action C-1.9 – Create an intermodal park and ride lot along the western boundary of theplan area, served by both the major collector roadway and the Class I trail system.

Action C-1.10 – Ensure that sheltered transit stops are located as directed by BCAG and the City of Chico.

Section 2.3.4 Chapter 6: Infrastructure and Public Facilities

Goal INFR-4: Promote On-Site Clean Energy Generation: Reduce GHG emissions through on-site clean energy generation.

Action INFR-4.1 – Require HOA owned and operated facilities to provide infrastructure capable of generating solar photovoltaic power covering no less than 20% of its internal base electrical loads.

Section 2.3.6 Appendix A: Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

Action DES-2.1 – Energy and Atmosphere: Build homes that meet or exceed CALGreen energy efficiency standards. Promote Net Zero ready designs and all electric (low carbon fuel source) buildings.

Action DES-2.2 – As applicable, ensure 100% of residential buildings to utilize solar photovoltaics per Title 24.

Action DES-2.3 – Water Efficient Design: Reduce residential water use by 20% or greater from baseline through Waterwise fixtures and consumer education.

Action DES-2.4 – Materials and Methods: Utilize material efficient construction methods, locally sourced products, durable materials and materials from renewable resources.

Action DES-2.6 – Construction Waste Reduction: Minimize construction waste and costs through modular off-site sub-assemblies and temporary on-site recycling facility (as economically feasible).

Action DES-2.7 – Site Sensitive Design: Promote building designs that reduce viewshed impacts, maintain architectural variety and continuity and respond to local conditions (diurnal breezes, passive solar design elements etc.).

Action DES-2.10 – Promote use of passive solar design elements and renewable energy technologies through NetZero ready design details and solar within public facilities.

Action DES-2.12 – Reduce outdoor water consumption and improve native wildlife habitat through drought tolerant native landscaping and efficient irrigation methods.

Action DES-2.14 – Ensure building materials including paints, floor finishes and insulation are low/zero VOC certified.

4.7.3 Impacts and Mitigation Measures

Methods of Analysis

Construction Emissions

CalEEMod Version 2020.4.0 was used to estimate potential project-generated GHG emissions during construction. Construction of the proposed project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The analysis of GHG emissions used the same methodology and assumptions as the analysis of air quality impacts in Section 4.2, Air Quality, of this EIR. All details for construction criteria air pollutants discussed in Section 4.2.3, Methods of Analysis (Construction Emissions) are also applicable for the estimation of construction-related GHG emissions. As such, see Section 4.2 for a discussion of construction emissions calculation methodology and assumptions used in the GHG emissions analysis.

Table 4.7-3 provides the project's annual construction related GHG emissions.

Table 4.7-3 Proposed Project - Estimated Annual Construction GHG Emissions

Year	CO2	CH4	N2O	CO2e
	Metric Tons per Year			
2022	216.39	0.07	0.00	218.17
2023	610.84	0.17	0.01	617.5
2024	789.28	0.06	0.06	808.97
2025	769.13	0.05	0.09	788.16
2026	404.73	0.05	0.02	412.8
2027	743.99	0.23	0.00	749.99
2028	508.9	0.16	0.00	513.03
2029	677.1	0.08	0.04	691.5
2030	1,123.91	0.02	0.09	1,150.57
2031	1,105.03	0.02	0.09	1,131.12
2032	1,076.38	0.02	0.08	1,101.54
2033	1,168.45	0.05	0.00	1,170.38
2034	425.33	0.01	0.01	428.84
2035	830.54	0.02	0.06	849.44
2036	833.72	0.02	0.06	852.69
2037	830.54	0.02	0.06	849.44
2038	252.36	0.01	0.00	253.85
2039	573.73	0.02	0.01	577.13
2040	273.05	0.01	0.01	276.58
2041	0.73	0.00	0.00	0.73
2042	152.57	0.00	0.01	154.39
2043	122.47	0.00	0.00	123.01
Total	**13,489.19**	**1.08**	**0.72**	**13,719.83**

Source: See Appendix B for complete results.
Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.

Operational Emissions

Emissions from the operational phase of the proposed project were estimated using CalEEMod Version 2016.3.2. Operational year 2045 was assumed which would be the first full year after construction of the proposed project has completed which is consistent with the traffic impact analysis (TIA) prepared for the proposed project (Appendix K). The proposed project would include a mix of residential, commercial, and retail land uses totaling 447,000 square feet of commercial uses and 2,777 residential units.

Potential project-generated operational GHG emissions were estimated for area sources (landscape maintenance), energy sources (electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in the following text with respect to the proposed project. For additional details, see Section 4.2.3, Methods of Analysis (Operational Emissions), for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy, and mobile sources.

The estimated operational (year 2045 project buildout is complete) project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 4.7-4.

Table 4.7-4. Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Without Regulatory Measures and Project Design Features				
Area	33.70	0.03	0.00	34.50
Energy	2,967.12	0.48	0.06	2,996.46
Mobile	14,606.53	0.76	0.61	14,807.90
Solid Waste	708.53	44.17	0.00	1,812.77
Water Supply and Wastewater	266.25	0.33	0.20	333.05
Unmitigated Operations Total	**18,582.12**	**45.77**	**0.87**	**19,984.68**
With Regulatory Measures and Project Design Features				
Area	33.70	0.03	0.00	34.50
Energy	2,136.32	0.35	0.04	2,157.45
Mobile	14,606.53	0.76	0.61	14,807.90
Solid Waste	177.13	11.04	0.00	453.19
Water Supply and Wastewater	213.00	0.27	0.16	266.44
Mitigated Operations Total	**17,166.69**	**12.45**	**0.81**	**17,719.48**

Source: See Appendix B for detailed results.
Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent
"Without State Measures and Project Design Features" matches with CalEEMod unmitigated emissions.
"With State Measures and Project Design Features" matches with CalEEMod mitigated emissions.
These emissions associated with the CalEEMod "mitigated" output and operational year 2045 even though compliance with the standard would not be considered actual mitigation including a 75% waste diversion pursuant to AB 341. Energy emissions assumes that the propose project's residential and nonresidential buildings will be constructed to meet the 2019 Title 24 Standards including the installation of PV panels in order to offset the electrical consumption of residential land uses by at minimum 28%, and reduction in water consumption by 20%. In addition, new buildings constructed were assumed to be fully electrified per the City's 2021 CAP.

Area

CalEEMod was used to estimate GHG emissions from the proposed project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 4.2.3 for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only, and little to no GHG emissions.

Energy

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the proposed project land uses. The energy use (electricity per square foot per year) from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database.

Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity) for CO_2 and other GHGs. Annual electricity emissions were estimated in CalEEMod using the emissions factors for Pacific Gas and Electric Company (PG&E), which would be the energy provider for the proposed project. Notably, it was assumed that the proposed project would be "all-electric," built without natural gas per GHG Reduction Measure E-2 within the City's 2021 CAP Update (City of Chico 2021). As such, natural gas was zeroed out in CalEEMod and replaced with equivalent electricity demand to account for water heating and heating, ventilation, and air conditioning (HVAC) operations.[4]

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt-hour) for PG&E is based on the value for PG&E's energy mix in 2008. As explained in Section 4.7.2, SB 100 increased the standards set forth by SB 350 calling for 52% of the total electricity sold to retail customers in California to come from renewable energy sources by 2027, 60% by 2030, and 100% renewable energy sources by 2045. The default CO_2 emissions intensity factor of 203.98 pounds per megawatt-hour was assumed in CalEEMod, although SB 100 requires utility providers such as PG&E to have 100% of electric retail sales come from eligible renewable or carbon-free sources by 2045. In addition, it was assumed that PV would offset at minimum 28% of the residential uses electricity consumption, consistent with action INFR-4.1 of the VESP.

Mobile Sources

All details for criteria air pollutants discussed in Section 4.2.3 in the Air Quality section of this EIR are also applicable for the estimation of operational mobile source GHG emissions. Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the NHTSA and EPA have established CAFE standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the proposed project's motor vehicles. The effectiveness of fuel economy improvements was evaluated by using the CalEEMod emission factors for motor vehicles in 2045 for the proposed project to the extent it was captured in EMission FACtors Model (EMFAC) 2017.

It should be noted that mitigation measure TRAF-2 would reduce average project-generated VMT per service population by instituting a Transportation Demand Management (TDM) program to reduce external vehicle trips generated by the proposed project. Implementation of these measures would further reduce GHG emissions presented in Table 4.7-4. However, because the extent of implementation and associated VMT reductions cannot be calculated at this time, no VMT reductions were accounted for in the analysis.

Solid Waste

The proposed project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste for the proposed project. The Neal Road Landfill uses a geomembrane cover on closed portions of the landfill that achieves 98% efficiency, and an intermediate cover on active portions that is 54-95% efficient (SCS Engineers 2009). Therefore, CalEEMod default values were updated to reflect that the landfill captures at least 90% of the methane produced. It was also assumed that the proposed project would be consistent with the City's 75% diversion goal by 2020 in accordance with AB 341.

[4] The increased electricity consumption of the proposed project is included in the GHG emissions estimation but would not generate on-site criteria air pollutants.

Water and Wastewater Treatment

Supply, conveyance, treatment, and distribution of water for the proposed project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the proposed project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. CalEEMod default values were adjusted based on the estimated water consumption data provided in the Water Supply Assessment prepared for the project (Appendix J). It is projected that the proposed project would consume approximately 1,751 acre-feet per year or 570 million gallons per year.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the VESP, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (California Air Pollution Control Officers Association [CAPCOA] 2008), GHG emissions impacts must also be evaluated on a project-level under CEQA.

As the lead agency, the City has the discretion to choose the significance threshold for discretionary projects. An efficiency metric approach, which is the basis for the GHG emission reduction targets established in the City's 2021 CAP Update, is appropriate for the proposed project because it measures the project's emissions on a per-person basis to determine its overall GHG efficiency relative to regulatory GHG reduction goals. The proposed project's GHG emissions are evaluated herein relative to the City's reduction target. The City's 2030 reduction target of 2.76 MT CO_2e per capita per year was used to evaluate the proposed project. The 2.76 MT CO_2e per capita was arrived at by dividing the City's targeted GHG emissions (297,386 MT CO_2e) by the total number of residents anticipated to exist within the City (107,712 people). If the proposed project achieves the efficiency metric, the proposed project would not interfere with the State's ability to achieve the mid-term and long-term GHG reduction targets set forth in per SB 32 and EO S-3-05.

Project Impacts

4.7-1 The proposed project could generate an increase in greenhouse gas emissions.

GHG impacts are cumulative impacts (CAPCOA 2008); therefore, the assessment of significance is based on a determination of whether the GHG emissions from a project represents a cumulatively considerable contribution to the global atmosphere. The impact to climate change due to the increase in ambient concentrations of GHGs differ from criteria pollutants in that GHG emissions from a specific project do not cause direct adverse localized human health effects. Rather, the direct environmental effect of GHG emissions is the cumulative effect of an overall increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. If a project exceeds the identified significance thresholds, its contribution of GHG emissions would be cumulatively considerable. The project's contribution to GHG emissions is addressed below.

Construction Emissions

Construction of the proposed project would result in GHG emissions which are primarily associated with use of off-road construction equipment and on-road vehicles (haul trucks, vendor trucks, and worker vehicles). CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 4.2.3, Methods of Analysis (Construction Emissions). Construction of the proposed project is modeled to last a total of approximately 21 years, from 2022 through 2043. On-site sources of GHG emissions would include off-road equipment and off-site sources including haul trucks, vendor trucks, and worker vehicles.

As shown in Table 4.7-3, the estimated GHG emissions from the worst-case model years for construction would exceed 1,000 MT CO_2e for approximately four years (2030-2033) during the build-out period. It is important to note that estimated project phasing is conceptual at this time, actual construction emissions would depend on development activity that takes place in the future. For informational purposes, estimated project-generated construction emissions amortized over the 21-year build-out period would be approximately 653 MT CO_2e per year. However, neither the City nor BCAQMD has established a threshold of significance for construction-related GHG emissions; therefore, the significance of the project's GHG construction emissions are not further evaluated.

Operational Emissions

Operation of the proposed project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 4.2.3, Methods of Analysis (Operational Emissions).

As shown in Table 4.7-4, estimated annual proposed project-generated GHG emissions would be approximately 17,688 MT CO_2e per year as a result of project operations. The proposed project's population, defined as the number of future residents, is 5,645 people. The proposed project would result in GHG emissions of approximately 3.13 MT CO_2e per capita. Thus, the proposed project's estimated GHG emissions would exceed the City's 2030 efficiency target of 2.76 MT CO_2e per capita per year. Furthermore, the VESP includes various actions and policies which would help reduce GHG emissions resulting from operation of the proposed project, as discussed in 4.7.2, above. Specifically, the proposed project would further reduce mobile GHG emissions through compliance with VESP actions PROS-3.1, LU-2.8, C-1.1, C-1.2, and C-1.7, which would promote a multimodal transportation network (i.e., walking, bicycling, transit, and vehicles) throughout the plan area. In addition, action C-1.5, C-1.7, and C-1.8 would also promote alternative methods of transportation by requiring the proposed project develop NEV and EV infrastructure. In addition, the proposed project would promote energy efficiency and water conservation through implementation of actions PROS-4.2, INFR-4.1, DES-2.1, DES-2.2, DES-2.3, DES-2.10, and DES-2.14. These measures would require the proposed project to incorporate drought tolerant landscaping and incorporate water efficient fixtures to reduce outdoor and indoor water consumption, install PV systems on all residential buildings, and exceed the CALGreen mandatory requirements.

Implementation of the VESP actions and policies would minimize GHG emissions associated with project operations. The emission reductions associated with compliance with these actions have been quantified in CalEEMod to the extent feasible (e.g., implementation of outdoor and indoor water conservation measures and use of PV on all residential buildings) and are reflected in the values shown in Table 4.7-4; however, most

of the actions are not quantifiable and/or the extent to which some would apply to the proposed project is unknown. Therefore, the proposed project's estimated operational GHG emissions of 3.13 MT CO_2e per capita would exceed the City's reduction target of 2.76 MT CO_2e per capita per year and the proposed project's GHG contribution would be cumulatively considerable and the impact is **significant**.

Mitigation Measures

Implementation of Mitigation Measures GHG-1 and GHG-2 would help reduce operational and construction-related GHG emissions. However, because it is not possible to quantify all the VESP's actions the project's GHG emissions would still exceed the GHG threshold and there are no other feasible mitigation measures to lessen the impact. Therefore, this impact would be considered **significant and unavoidable**.

GHG-1: The City shall ensure that each future development projects provide storage areas for recyclables and green waste, and food waste storage, if a pick-up service is available.

GHG-2: Implement Mitigation Measures AQ-2 and AQ-3 (Section 4.2, Air Quality) and GHG-1, to reduce construction and operational-related energy consumption and GHG emissions.

4.7-2 The proposed project could conflict with a plan, policy or regulation to reduce greenhouse gas emissions.

Consistency with the City of Chico 2021 CAP Update GHG Reduction Measures

The City's CAP Update identifies a variety of GHG reduction measures to help the City progress towards a carbon neutrality goal. Several of the reduction measures would be applicable to the proposed project. The GHG reduction measures cover areas such as energy, transportation, waste, sequestration, and education outreach. The GHG reduction measures within the City's CAP Update are outlined in Table 4.7-5, along with an overview of the proposed project's consistency with specific measures.

Table 4.7-5. Proposed Project Consistency with the City of Chico 2021 CAP Update

CAP Measure	Proposed Project Consistency
Measure E-1: Procure carbon-free electricity for the community through a CCA by 2024 and maintain opt-out rates of 5% for residential and 15% for commercial through 2030 and 2045	*Consistent.* New residents and businesses would be automatically enrolled in the 100% renewable energy option provided by Butte Choice Energy depending on market conditions.
Measure E-2: Eliminate natural gas in all new building construction starting in 2025 to reduce natural gas 6% by 2030 and 16% by 2045 compared to the adjustment forecast.	*Consistent.* The proposed project would comply with the State's current Title 24 Building Energy Efficiency Standards and new buildings would be all-electric.
Measure E-3: Electrify existing residential buildings starting in 2027 to reduce overall residential natural gas consumption to 100 therms per person by 2030 and 30 therms per person by 2045.	*Not applicable.* The proposed project would not prevent City from implementing this measure for existing residences.
Measure E-4: Increase generation and storage of local renewable energy	*Consistent.* Future buildings and parking areas shall be consistent with municipal code requirements which would include PV arrays.

Table 4.7-5. Proposed Project Consistency with the City of Chico 2021 CAP Update

CAP Measure	Proposed Project Consistency
Measure T-1: Improve active transportation infrastructure to achieve greater than 6% bicycle mode share by 2030 and 12% bicycle mode share by 2045	*Consistent.* The proposed project would develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; and reinforces the role of the street as a public space that unites the community. The proposed project would also be consistent with the Chico Bicycle Plan.
Measure T-2: Improve EV infrastructure to achieve greater than 23% EV share of car registrations by 2030 and 90% by 2045	*Consistent*. Actions C-1.5, C-1.7, and C-1.8, in addition to Title 24 building code requirements, would promote alternative methods of transportation by requiring the proposed project develop EV infrastructure
Measure T-3: Improve shared mobility and transit programs and infrastructure	*Consistent*. Non-residential uses within the proposed project would be required to incorporate a TDM plan (per Air Quality and Transportation mitigation requirements).
Measure T-4: Implement parking and curb management procedures that support the mode shift goals of the overall transportation strategy	*Consistent*. Non-residential uses within the proposed project would be required to incorporate a TDM plan (per Air Quality and Transportation mitigation requirements), and any applicable City ordinances in the future that require carpool/vanpool/shuttle parking minimums.
Measure T-5: Support implementation of the City's General Plan that promotes sustainable infill development and mixed-use development in new growth areas to reduce VMT	*Consistent.* The proposed project would include a mix of commercial, retail, educational and recreational uses that would serve the needs of future residents. The proposed mix of uses would be integrated with a multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; and reinforces the role of the street as a public space that unites the community.
Measure W-1: Update waste hauler franchise agreements to implement requirements of SB 1383 and Achieve 75% reduction below 2014 levels in organic waste to 0.4 tons of waste per person by 2025 and maintain through 2045	*Consistent.* The proposed project would be required to comply with all regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act and the waste and recycling requirements of the City's solid waste provider.
Measure S-1: Increase carbon sequestration by increasing urban canopy cover at least 10% by 2030 through new greenscaping programs	*Consistent.* The proposed project would incorporate a street-tree program including oak and other native trees that includes planting new trees.
Measure S-2: Develop and implement the Urban Forest Master Plan	*Not applicable.* The proposed project would implement its own Oak Woodland Mitigation and Management Plan and would not prevent City from implementing its complementary Urban Forest Master Plan.
Measure O-1: Conduct a holistic community outreach and education program to optimize CAP implementation	*Not applicable.* The proposed project would not prevent City from implementing this measure.

Source: City of Chico 2021.
Notes: CCA = Community Choice Aggregation; EV = electric vehicle; PV = photovoltaic; SB = Senate Bill; VMT = vehicle miles traveled.

Consistency with the BCAG's 2016 Regional Transportation Plan

BCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks within Butte County. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. While the 2016 RTP/SCS does not regulate land use or supersede the exercise of land use authority by BCAG's member jurisdictions (i.e., the City), the 2016 RTP/SCS is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns and the corresponding GHG emissions. The 2016 RTP/SCS is not directly applicable to the project because the underlying purpose of the 2016 RTP/SCS is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the City and greater Butte County, as stipulated under SB 375. CARB has recognized that the approved 2016 RTP/SCS is consistent with SB 375.

In addition to demonstrating the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the project, the goals set forth in the 2016 RTP/SCS which may be applicable to the project include reducing overall vehicle trips and VMT. The project's consistency with the 2016 RTP/SCS is discussed below.

The project's consistency with this aspect of the 2016 RTP/SCS is demonstrated via the project's land use characteristics and features that would reduce vehicular trips and VMT. As discussed in Section 4.2, Air Quality, the City's 2030 General Plan designates five new growth areas or special planning areas within the City's SOI. The project site is designated in the General Plan as Special Planning Area (SPA)-5 or the Doe Mill/Honey Run SPA. The proposed project's land uses and development assumptions are generally consistent with the City's General Plan as the designations for the site would still permit a variety of residential, commercial, and open space uses. Thus, the project is concluded to have been anticipated in the BCAG 2016 RTP/SCS growth projections. In addition, per the VMT analysis prepared for the project, the per service population VMT for the project at buildout is estimated to be 26.1, which is less than the regional estimate of 30.5. Therefore, the project would not exceed the regional (City) VMT per service population estimates and the project is anticipated to be consistent with 2016 RTP/SCS strategies focused on VMT.

Based on the analysis above, the project would not conflict with the strategies of the BCAG 2016 RTP/SCS.

Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[5] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state

[5] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009a).

agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. Table 4.7-6 highlights measures that have been, or would be, developed under the Scoping Plan and presents the project's consistency with Scoping Plan measures. The proposed project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the proposed project.

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	*Consistent.* The proposed project's residents, employees, and visitors would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	*Consistent.* This is a statewide measure that cannot be implemented by a project developer or lead agency. Nonetheless, this standard would be applicable to the fuel used by vehicles that would access the project site (i.e., motor vehicles driven by the project residents, employees, and visitors use compliant fuels).
Regional Transportation-Related GHG Targets	T-3	*Not applicable.* The proposed project is not related to developing GHG emission reduction targets. To meet the goals of SB 375, the 2016 RTP/SCS is applicable to the proposed project. The proposed project would not preclude the implementation of this strategy.
Advanced Clean Transit	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Last-Mile Delivery	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduction in VMT	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	*Consistent.* These standards would be applicable to the light-duty vehicles that would access the proposed project site. Motor vehicles driven by the proposed project's residents, employees, and visitors would maintain proper tire pressure when their vehicles are serviced. The proposed project's employees and customers would replace tires in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. Motor vehicles driven by the proposed project's residents, employees, and visitors would use low-friction oils when their vehicles are serviced and would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. In addition, the proposed project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	*Consistent.* Heavy-duty vehicles would be required to comply with CARB GHG reduction measures. In addition, the proposed project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	*Consistent.* The proposed project's medium- and heavy-duty vehicles (e.g., delivery trucks) could take advantage of the vehicle hybridization action, which would reduce GHG emissions through increased

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
		fuel efficiency. In addition, the proposed project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	*Consistent.* The proposed project would comply with the current Title 24 Building Energy Efficiency Standards. In addition, the proposed project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	*Consistent.* The proposed project would comply with the current Title 24 Building Energy Efficiency Standards and new buildings would be all-electric. In addition, the proposed project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	*Consistent.* The proposed project would include solar water heating, where feasible.
Combined Heat and Power	E-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (33% by 2020)	E-3	*Consistent*. The electricity used by the proposed project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewables Portfolio Standard (50% by 2050)	N/A	*Consistent*. The electricity used by the proposed project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Water Recycling	W-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	*Not applicable.* This is applicable for the transmission and treatment of water, but it is not applicable for the proposed project. The proposed project would not prevent CARB from implementing this measure.

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Reuse Urban Runoff	W-4	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	*Not applicable.* Applicable for wastewater treatment systems. In addition, the proposed project would not prevent CARB from implementing this measure.
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	*Consistent.* The proposed project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Consistent*. The proposed project's buildings would meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Consistent*. The proposed project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	*Consistent.* This is applicable for existing buildings only. For proposed project building that would be retrofitted, the buildings would meet current applicable building standards at the time of design and construction.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	*Consistent.* During both construction and operation of the proposed project, the project developers would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.
Increase Production and Markets for Compost and Other Organics	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Forest Sector		
Sustainable Forest Target	F-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	*Consistent.* The proposed project's residents would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs) in Semiconductor Manufacturing	H-3	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	*Consistent.* The proposed project would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	*Consistent*. Motor vehicles driven by the proposed project's residents, employees, and visitors would comply with the leak test requirements during smog checks.

Table 4.7-6. Proposed Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
50% Reduction in Black Carbon Emissions	N/A	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	*Not applicable.* The proposed project would not prevent CARB from implementing this measure.

Source: CARB 2008.
Notes: GHG = greenhouse gas; CARB = California Air Resources Board; VMT = vehicle miles traveled; SB = Senate Bill; N/A = not applicable; SF_6 = sulfur hexafluoride.

Based on the analysis in Table 4.7-7, the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan.

Consistency with EO S-3-05 and SB 32

- EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.
- SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030.

This section evaluates whether the GHG emissions trajectory after proposed project completion would impede the attainment of the 2030 and 2050 GHG reduction goals identified in EOs B-30-15 and S-3-05.

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the Second Update which states (CARB 2017b, p. 7):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.

As discussed previously total proposed project emissions would be approximately 3.13 MT CO_2e per capita, which exceeds the City's reduction target of 2.76 MT CO_2e per capita per year. As such, the proposed project would generate GHG emissions that may interfere with the implementation of GHG reduction goals for 2030 and 2050. Therefore, the proposed project would potentially conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions and could result in a **significant impact**.

Mitigation Measures

Implementation of Mitigation Measures AQ-2, AQ-3 and GHG-1 would reduce operational-related GHG emissions. However, the project's GHG emissions would still exceed the applied GHG threshold and there are no feasible mitigation measures available to reduce the impact. Therefore, this impact would be considered **significant and unavoidable.**

Cumulative Impacts

As discussed above under Impact 4.7-1, GHGs are inherently cumulative in nature so a separate assessment of the project's cumulative contribution is not required because it has already been evaluated under Impact 4.7-1.

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4.8 Hazards and Hazardous Materials

4.8.0 Introduction

This section describes the potential adverse effects on the environment due to exposure to hazards or hazardous materials that could result from implementation of the Valley's Edge Specific Plan (proposed project or VESP). Hazards evaluated include potential exposure to hazardous materials used, generated, stored, or transported in or adjacent to the project site, such as asbestos-containing materials and lead-based paint associated with the former ranch. Included in the discussion is a summary of applicable hazardous materials laws, regulations, and agencies responsible for their implementation and oversight. Potential hazards and associated impacts related to toxic air contaminant (TAC) emissions are discussed in Section 4.2, Air Quality, of this Draft EIR. Potential hazards associated with an increase in traffic volumes in and around the project site are addressed in Section 4.13, Transportation and Circulation. Public safety during a regional flood event and evacuation of the site in the event of a flood are addressed in Section 4.9, Hydrology, Water Quality and Drainage.

Comments received in response to the Notice of Preparation (NOP) include concerns associated with potential wildfire hazards and emergency evacuation plans. Exposure of people or structures to risk of loss, injury or death involving wildfire hazards and potential impacts related to impairing emergency access or interference with an adopted emergency response or evacuation plan are further addressed in Section 4.14, Wildfire. No comments were received regarding hazardous materials concerns. A copy of the NOP and comments received is included in Appendix A.

Sources reviewed to prepare this section include a Phase I Environmental Site Assessment (Phase 1 ESA) prepared for the project site by NV5 (June 2019), which also includes a current search of available environmental records conducted by Environmental Data Resources (EDR) Inc. (collectively included as Appendix G). The Phase I ESA includes an overview of the history of the property and vicinity within a half-mile radius of the site. EDR conducted a records search for active sites where releases or spills of hazardous materials have occurred within a one-half mile radius hydrogeologically upgradient of the project site, as well as identified any facilities up to 2.125 miles away from the site that are known to have environmental concerns or are listed as a facility with permits to generate, handle, store, or dispose of hazardous materials.

4.8.1 Environmental Setting

Site Description and History

The project site consists of 1,488 acres of mostly vacant land and is located 1.25 miles east of State Route (SR) 99 in unincorporated Butte County (see Figure 2-2 in Chapter 2, Project Description). The site contains three freestanding double-sided billboards along Skyway, high-power overhead utility lines and poles traverse the site north to south and east to west, visible from both Skyway and Honey Run Road, a network of trails, a private disc golf course, a series of rock walls, and two agricultural groundwater wells. In the southwest portion of the site exists the foundation of a former residence (ranch house), two sheds, two barns, a storage container, and livestock corrals, as the site is leased out seasonally for winter cattle grazing.

Topography of the site includes rolling foothills and ridges, with four westerly-flowing seasonal drainages. The site slopes from the hills on the east, westward towards the valley floor. The property elevation ranges from approximately 500 above mean sea level (amsl) in the northeast portion, to approximately 250 amsl in the southwest portion (USGS 2012). Annual grassland, valley oak woodland, and blue oak foothill pine are dispersed throughout the site.

The project site is located in a wildland-urban interface area (WUI) where forested lands and vegetation meet human development, creating a greater wildland fire risk to communities within the WUI. Hazards associated with wildfires and the WUI are discussed and evaluated in greater detail in Section 4.14, Wildfire.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) National Pipeline Mapping System was accessed on October 23, 2019 by Dudek to determine whether hazardous materials underground pipelines are present at the site. A gas transmission pipeline surrounds the City of Chico, following along Neal Road and the Oroville-Chico Highway. The closest point of this gas transmission pipeline to the project site is 1.65 miles southwest on Midway Road, just outside of the city boundary. The end of a hazardous liquid pipeline is located approximately 1.9 miles west of the site near Hegan Lane. No hazardous liquid or gas transmission pipelines are known to be located on or adjacent to the project site (PHMSA 2019).

Nearby Land Uses

The project site is located within the City of Chico's (City) Sphere of Influence with the western boundary of the project site adjacent to the city limits. The closest school to the project site is Little Chico Creek Elementary, approximately 1.2 miles northwest of the intersection of East 20th Street and the Steve Harrison Memorial Bike Path (Bike Path). The closest airport is the Chico Municipal Airport, located approximately 6.0 miles northwest of the project site. Single-family homes and rural Stilson Canyon are located to the north while the northwest corner of the project site is adjacent to single-family development located within the City. Land to the west is currently used as an open space preserve associated with the recently entitled Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone project (Stonegate residential subdivision project), which would subdivide a 313-acre site into a combination of open space, public right-of-way, parks, single-family residential standard lots, multi-family residential, and commercial uses. The project site is separated from the Stonegate residential subdivision project by the Bike Path and a proposed park and areas slated to remain in open space.

The entire eastern boundary of the project site is defined by a 1.5-mile rock wall, separating the project site from vacant land zoned AG-160 (160-acre minimum) in the County and historically used for winter cattle grazing. The project site is physically separated from adjacent areas to the south by Honey Run (Humbug) Road and Skyway. Land uses south of Skyway include a 6-hole golf course, a solar array, an asphalt production plant, and other light industrial uses. The southeast boundary of the project site borders Honey Run Road. Land uses along the south side of Honey Run Road consist primarily of single-family homes on large parcels, under the jurisdiction of Butte County.

Historical Land Uses

Based on a review of historical aerial photographs, the southwest portion of the site was used for agricultural activities from at least 1941 (the earliest available aerial photograph). Six ranch-related and residential structures were present, appearing to be consistent with current structures (or building remnants) at the site. In 1947, the existing overhead transmission lines were visible on the property. A small unidentified white

feature is visible in the east-central portion of the site in the 1962 photograph, possibly related to livestock activities. The Phase I ESA also discussed site history and current uses of the property the current property owner representative, who reported that the site had been used as a sheep ranch from the late 1800s until the 1970s (discussed in more detail below). Since the 1970s, the property has been used for winter cattle grazing and beekeeping (near Honey Run Road).

Off-site residential development immediately northwest of the project site began in 1993 and continued through 2016.

Previous Site Investigations

2013 Phase I Environmental Site Assessment

A Phase I ESA (see Appendix G) was prepared in accordance with American Society for Testing and Materials (ASTM) Standard E-1527-13 in 2013 by NV5 in June 2019. The purpose of the Phase I ESA was to evaluate whether there is evidence of recognized environmental conditions (RECs) which may have affected or have the potential to affect the existing conditions of the project site. RECs pertain to the presence (or likely presence) of hazardous substances or petroleum products under conditions that indicate an existing or past release, or material threat of a release into structures or into the ground, groundwater, or surface water.

As previously discussed, the site had been used as a sheep ranch from the late 1800s until the 1970s, and for winter cattle grazing and beekeeping since the 1970s. Based on aerial photographs taken between 1941 and 2016, there are six structures appearing to be a ranch house and associated outbuildings located in the southwestern portion of the project site. These structures appear to be consistent with existing structures and remnant foundations currently present on the site. The property owner's representative also reported that these buildings were constructed prior to the early 1940s, and the farmhouse was likely demolished in the late 1970s. The Phase I ESA indicated the potential for asbestos-containing materials and lead-based paint to be present due to the age of the buildings on the site. No evidence of the presence of underground storage tanks (USTs) was identified in the Phase I ESA. From the site reconnaissance conducted on May 8, 2019, two agricultural wells (not in use), a round stone structure which may have been used as a cistern or well, and a potential septic tank believed to be associated with the former farmhouse were observed. Other site observations included a mound of soil from an unknown source, present in this area. The property owner's representative indicated that it was created during grading of the area where the storage container (used to store all-terrain vehicles) was placed. No use or storage of hazardous materials was reported or observed.

The Phase I ESA does not identify any evidence of hazardous waste generation or storage, petroleum hydrocarbon products, chemical usage, stained soils, or other RECs or potential RECs on the adjacent properties (see Appendix G). In addition, there is no known current or historical use of volatile organic compounds (VOCs) on the property, and no reported presence of VOCs in groundwater in any nearby hydrogeologically upgradient properties. Thus, vapor intrusion is not considered an environmental concern at the site.

Geologic literature regarding the distribution and occurrence of naturally occurring asbestos (NOA) and radon gas in California was also reviewed. The project site is not in an area mapped as likely to contain NOAs or underlain by geologic deposits that increase the chance of elevated radon gas. Ultramafic rock outcrops, typically associated with NOAs, were not observed at the site. As such, NOAs and radon gas were not determined to be RECs for the project site.

Based on findings of the Phase I ESA, the only concerns noted were the possible presence of asbestos containing materials and lead-based paint. No RECs associated with the project site or adjacent sites were identified, and no further investigations were recommended.

Database Searches

EDR conducted a records search for active sites where releases or spills of hazardous materials have occurred within a one-half mile radius hydrogeologically upgradient of the project site, as well as a search for facilities up to 2.125 miles away from the site that are known to have environmental concerns or have permits to generate, handle, store, or dispose of hazardous materials. The search performed for this assessment was conducted in April 2019, included as Appendix A of the Phase I ESA (see Appendix G). The project site is not listed in any of the computerized regulatory databases searched by EDR and is not on a list of sites complied pursuant to California Government Code Section 65962.5. Sources reviewed by EDR include the Butte County Division of Environmental Health, City of Chico Building Department, and the State Water Resources Control Board. No offsite properties with the potential to affect environmental conditions at the project site were identified and there are no records related to hazardous materials handling, storage, or incidents at the project site.

4.8.2 Regulatory Setting

Federal Regulations

Hazardous Waste Management

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA. The statute also addresses program administration; implementation and delegation to the states; enforcement provisions and responsibilities; and research, training, and grant funding.

EPA Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)

The asbestos NESHAP regulations specify work practices for asbestos to be followed during demolition and renovation of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). 40 CFR Part 61 states that the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation will thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos. The regulations require the owner of the building or the operator to notify the appropriate state agency before any demolition, or before any renovations of buildings that could contain a certain threshold amount of asbestos or asbestos-containing material. In addition, particular manufacturing and fabricating operations either cannot emit visible emissions into the outside air or must follow air cleaning procedures, as well as follow certain requirements when removing asbestos-containing waste. 40 CFR Part 61, Subpart M establishes the National Emission Standards for Hazardous Air Pollutants (NESHAP) and names asbestos-containing material as one of these materials. Asbestos-containing material use, removal, and disposal are regulated by U.S. EPA under

this law. Work practice standards under the EPA for air toxics regulations would include removing all asbestos-containing materials, adequately wetting all regulated asbestos-containing materials, sealing the material in leak tight containers and disposing of the asbestos-containing waste material as expediently as practicable. In addition, notification of friable asbestos-containing material removal prior to a proposed demolition project is required by this law.

Universal Waste Management

40 CFR Part 273 governs the collection and management of widely generated waste, including batteries, pesticides, mercury-containing equipment, and bulbs. This regulation streamlines the hazardous waste management standards and ensures that such waste is diverted to the appropriate treatment or recycling facility.

U.S. Department of Labor, Occupational Safety and Health Administration

29 CFR Part 1910, Occupational Safety and Health Standards, requires facilities that use, store, manufacture, handle, process, or move hazardous materials to conduct employee safety training; inventory safety equipment relevant to potential hazards; have knowledge on safety equipment use; prepare an illness prevention program; provide hazardous substance exposure warnings; prepare an emergency response plan, and prepare a fire prevention plan.

29 CFR Part 1926 establishes safety and health regulations for construction. These standards require employee training; personal protective equipment; safety equipment; and written procedures, programs, and plans for ensuring worker safety when working with hazardous materials or in hazardous work environments during construction activities, including renovations and demolition projects and the handling, storage, and use of explosives. These standards also provide rules for the removal and disposal of asbestos, lead, lead based paint, and other lead materials.

U.S. Department of Transportation

Transportation of hazardous materials is regulated by the U.S. Department of Transportation's Office of Hazardous Materials Safety. The office formulates, issues, and revises hazardous materials regulations under the Federal Hazardous Materials Transportation Law. The hazardous materials regulations cover hazardous materials definitions and classifications, hazard communications, shipper and carrier operations, training and security requirements, and packaging and container specifications. Vehicles transporting hazardous materials must be properly placarded. In addition, the carrier is responsible for the safe unloading of hazardous materials at the site, and operators must follow specific procedures during unloading to minimize the potential for an accidental release of hazardous materials. The hazardous materials transportation regulations are codified in 49 CFR Parts 100–185.

State Regulations

California Hazardous Waste Control Law

The California Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency (CalEPA) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the U.S. EPA approves the California program, both the state and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

The California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261, defines hazardous waste as:

> a waste that exhibits the characteristics that may: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed or otherwise managed.

According to 22 CCR, substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated, or that is being stored prior to proper disposal.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

Cal/OSHA is the agency responsible for enforcement of the construction safety orders of 8 CCR 1529 related to asbestos removal and cleanup. Section 1529 regulates construction-related asbestos exposure involving demolition of structures, removal of ACMs, asbestos clean-up, or excavation activities which may involve exposure to asbestos. Work practice standards for Cal/OSHA are similar to the EPA, but also include the presence of an asbestos competent person for monitoring during all demolition activities, HEPA filter dust collection systems, and ventilation of enclosed or isolated areas. Section 1532.1 addresses specific measures for construction workers to take if exposed to sources that contain lead, including lead-based paint.

Field Act

Under the Field Act, the Department of General Services (DGS) is required to supervise the design and construction, reconstruction, or alteration of any school buildings to ensure that the plans and specifications are in compliance with adopted rules, regulations, and building standards for the protection of life and property. Specifically, Title 5 of the California Code of Regulations sets forth standards for school site selection including detailed standards for the design and construction of school facilities. Within the DGS, the Division of the State Architect (DSA) is responsible for design and construction oversight for K-12 schools to ensure compliance with Title 5 of the California Code of Regulations and application of the California Building Code (CBC), pursuant to the Field Act. Additionally, the DSA promotes compliance with all relevant structural, accessibility, and fire and life safety codes.

California Department of Education

The California Department of Education maintains specific guidelines regarding the placement of school facilities that are at times more stringent than other types of development. Additionally, if any state school bonds are used for the proposed school land use, then the school district must prepare site assessments and

any other California Department of Toxic Substances Control (DTSC)-ordered studies to ensure safety on the school site. The results of the evaluation would be subject to review by the DTSC prior to development of the parcel. If the DTSC determines that no further investigation is needed, the site would be cleared for DTSC approval. However, if the DTSC does not approve the Phase I, a Preliminary Environmental Assessment (PEA) would be required. The evaluation of the school site would also be subject to a subsequent CEQA review process by the school district upon purchase or intent to purchase the identified site due to these potential impacts and because approval of the school falls under a separate jurisdiction.

Lead-Based Paint

The California Department of Public Health enforces lead laws and regulations related to the prevention of lead poisoning in children, prevention of lead poisoning in occupational workers, accreditation and training for construction-related activities, lead exposure screening and reporting, disclosures, and limitations on the amount of lead found in products. Accredited lead specialists are required to find and abate lead hazards in a construction project and to perform lead-related construction work in an effective and safe manner. Specific regulations include:

California Health & Safety Code Section 105250

Establishes a program to accredit lead-related construction training providers and certify individuals to conduct lead-related construction activities.

California Civil Code Sections 1102 to 1102.16

Requires the disclosure of known lead-based paint hazards upon sale of a property.

California Labor Code Sections 6716 to 6717

Provides for the establishment of standards that protect the health and safety of employees who engage in lead-related construction work, including construction, demolition, renovation, and repair.

California Health & Safety Code Sections 105185 to 105197

Establishes an occupational lead poisoning prevention program to register and monitor laboratory reports of adult lead toxicity cases, monitor reported cases of occupational lead poisoning to ascertain lead poisoning sources, conduct investigations of take-home exposure cases, train employees and health professionals regarding occupational lead poisoning prevention, and recommended means for lead poisoning prevention.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) protects water quality in California by setting statewide policy. The SWRCB supports the nine Regional Water Quality Control Boards, which, within their areas of jurisdiction, protect surface and groundwater from pollutants discharged or threatened to be discharged to the waters of the state. For the City of Chico, the Central Valley RWQCB (CVRWQCB) maintains jurisdiction within the subject basin. This protection is carried out through the issuance and enforcement of National Pollutant Discharge Elimination System (NPDES) permits, called Waste Discharge Requirements (WDRs), regulation of leaking underground storage tanks and contaminated properties through the Leaking Underground Storage Tank (LUST) and Spills, Leaks, Investigation, and Cleanup (SLIC) programs, respectively. USTs are regulated under Chapter 6.7 of the California Health and Safety Code and 23 CCR Chapter 16.

California Health and Safety Code – Handling and Storage of Hazardous Waste

In California, the handling and storage of hazardous materials is regulated by Chapter 6.95 of the California Health and Safety Code. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a Hazardous Materials Business Plan. The plan provides information to the local emergency response agency regarding the types and quantities of hazardous materials stored at a facility and provides detailed emergency planning and response procedures in the event of a hazardous materials release. In the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by the California code, facilities are also required to prepare a Risk Management Plan and California Accidental Release Plan, which provides information on the potential impact zone of a worst-case release, and requires plans and programs designed to minimize the probability of a release and mitigate potential impacts.

California Health and Safety Code – Transportation of Hazardous Waste

In California, transportation of hazardous waste is regulated under Chapter 6.5 of the California Health and Safety Code. Under Section 21560, hazardous waste generators must complete a manifest for the waste before it is transported or offered for transportation. A manifest is a shipping document that is signed by the hazardous waste generator and contains the necessary information to be in compliance with all state and federal regulations. The purpose of the manifest is to allow for the waste to be tracked from point of origin through point of disposal and for the generator or regulatory agency to verify that the waste is properly delivered without incurring any loss along the way. The enforcement agencies for the transportation of hazardous materials regulations are the California Highway Patrol and Caltrans.

Emergency Response/Evacuation Plans

The state of California passed legislation authorizing the Office of Emergency Services (CalOES) to prepare a Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with the program could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Disaster and Civil Defense Master Mutual Aid Agreement

The California Disaster and Civil Defense Master Mutual Aid Agreement states that all resources and facilities of the state, including all political subdivisions, shall voluntarily aid and assist each other in the event of a disaster by the interchange of services, including rescue, relief, evacuation, rehabilitation, and reconstruction (CalOES 1950).

Local Regulations

Butte County Emergency Response

The Butte County Local Hazard Mitigation Plan (LHMP) was prepared to reduce risks for hazards by helping decision makers direct mitigation activities and resources. The LHMP documents the hazard mitigation planning process and identifies relevant hazards and vulnerabilities facing the county. The LHMP also includes the strategies the County will use to increase resiliency in the face of hazardous situations. This multi-jurisdictional plan includes Butte County, the cities of Biggs, Chico, Gridley, Oroville, and the Town of Paradise, as well as a number of public utilities and services agencies serving the area. According to the LHMP's Hazard Identification Assessment, the most significant hazards in the county are dam failure, 100, 200, and 500-year

floods, levee failure, and wildfire (Butte County 2019). Butte County has adopted a multi-jurisdictional Emergency Operations Plan (EOP), which assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The intent of the EOP is to provide direction on how to mobilize and respond to an emergency from onset to recovery (Butte County 2011).

The Butte Emergency Command Center is the mutual aid coordination center for Butte County. They have the responsibility for coordinating all mutual aid requests in Butte County and have the authority to directly obtain resources from neighboring counties including Yuba, Sutter, Plumas, Glenn, Colusa, Tehama, and Lassen (Butte County 2018c). Butte County is also part of the California Disaster and Civil Defense Master Mutual Aid Agreement and is able to share or receive resources and/or services with other jurisdictions within California in the event of a disaster or emergency situation.

Hazardous Materials Joint Powers Agreement

The Hazardous Materials Joint Powers Agreement (JPA) was initiated in December 1990 by Butte County and its five cities: Biggs, Chico, Gridley, Oroville, and the Town of Paradise. The JPA is governed by the fire chiefs of the six signatory agencies (including Butte County). The Chico Fire Department (CFD) provides 11 of the 40 authorized state certified specialist positions on the team. The nearest specialists are dispatched to any hazardous materials emergency, regardless of jurisdiction (Butte LAFCO 2018).

City of Chico 2030 General Plan

The City's 2030 General Plan includes a number of goals, policies and actions that address the use, handling, storage, and transport of hazardous materials and emergency response in the event of a fire or other city-wide emergency. Relevant goals, policies and actions are as follows.

Safety Element

Under Goal S-1, the General Plan provides several policies and actions related to emergency preparedness, fire hazards, public safety, and emergency response planning.

Goal S-1-: Minimize the loss of life and property resulting from natural and human-caused hazards.

> **Policy S-1.1 (Emergency Preparedness)** – Promote public safety from hazards that may cause death, injury, or property damage through emergency preparedness and awareness.
>
> > **Action S-1.1.1 (Emergency Plan Maintenance)** – Maintain, and update as needed, the City's Emergency Plan to guide emergency management in the City.
> >
> > **Action S-1.1.2 (Emergency Response Awareness) –** Promote community preparedness for hazards and awareness of emergency notification methods.
> >
> > **Action S-1.1.3 (Incident Training)** – Continue to participate in the Federal Emergency Management Agency's National Incident Management System program, which provides a standardized approach to emergency incidents.

Goal S-4: Continue to provide effective and efficient fire protection and prevention services to Chico area residents.

Policy S-4.1 (Fire Safety Staffing) – Maintain adequate fire suppression and prevention staffing levels.

Policy S-4.2 (Interagency Coordination) – Continue to maintain interagency relationships to maximize fire protection services and support programs that reduce fire hazards.

Policy S-4.3 (Fire Safety Standards and Programs) – Support the development and implementation of standards and programs to reduce fire hazards and review development and building applications for opportunities to ensure compliance with relevant codes.

Goal S-8: Reduce the potential for public exposure to hazardous materials or the accidental releases of toxic or hazardous substances.

Policy S-8.1 (Hazardous Materials Safety Coordination) – Support efforts to reduce the potential for accidental releases of toxic and hazardous substances.

Action S-8.1.1 (Planning for Hazardous Materials Safety) – Consult with the State Office of Emergency Services, the State Department of Toxic Substances Control, the California Highway Patrol, Butte County, and other relevant agencies regarding hazardous materials routing and incident response programs.

Policy S-8.2 (Reduce Toxic Materials Use) – Reduce the use of hazardous and toxic materials in City operations.

City of Chico Emergency Response

As part of the Butte County LHMP, a Hazard Identification Assessment was conducted for the City of Chico, indicating that drought and water shortage, earthquake and liquefaction, 100, 200, and 500 year floods, heavy rain and storms, and wildfire are the hazards with the most widespread potential impact. The City has established a number of agreements and procedures regarding response to emergency situations. This includes standard emergency response procedures in line with the CalOES Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters and mutual aid agreements for emergency assistance. These emergency response measures are included in the Butte County EOP, such established roles for command/management, communication protocols, and establishment of priorities for resource allocation (Butte County 2011). The City maintains numerous mutual aid agreements, including those with Butte County, CSU, Chico's University Police Department, and all other jurisdictions of the state during emergency situations (in accordance with the California Disaster and Civil Defense Master Mutual Aid Agreement) for fire, police, evacuation, and rescue, among other shared services. The General Plan identifies Highway 99 and State Route 32 as emergency routes for evacuation within the city.

City of Chico Division of Community Risk Reduction

The City Division of Community Risk Reduction is responsible for services related to permits, inspections, and general implementation of the International Fire Code and other safety protections.

City of Chico Municipal Code

The City's Municipal Code includes a number of provisions that address public safety.

Chapter 15.50 Storm Water Management and Discharge Controls

This chapter of the Municipal Code states control methods to protect and enhance the water quality of the city, and to protect and promote the health, safety and general welfare of the citizens of the city by prescribing

regulations to effectively prohibit non-storm water discharges to the storm drain system. Section 15.50.060 states that any person subject to a construction activity NPDES storm water discharge permit shall comply with all provisions of such permit, including a Stormwater Pollution Prevention Plan (SWPPP) for the construction project (see Section 4.9, Hydrology, Water Quality, and Drainage, for more detail). The SWPPP requires plans to be prepared in the event of any spill or other accidental release of hazardous materials.

Chapter 16.42: Fire Regulations

The purpose of the fire regulations adopted by this title is to safeguard life and property from the hazards of fire and explosion arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or structures.

Chapter 16R.42: Fire Regulations Standards

The "Fire Regulation Standards" of the city shall govern the transportation, storage, or use of any substance or material, the installation, possession, or operation of any equipment or device, the improvement, alteration, occupation or maintenance of any premises, or the creation of any condition or commission of any act which is subject to such standards. Said standards shall include the regulation of non-building standards activities in all structures, facilities, premises, and occupancies, including those not regulated by the State Fire Marshall, within the city's jurisdiction, when deemed applicable by the Fire Chief, or his or her designee, for the prevention of fire and/or for the protection of life and property against fire.

Valley's Edge Specific Plan

The VESP does not include any goals or actions specific to hazards and hazardous materials. However, there are firewise guidelines, standards and vegetation management standards contained in Chapter 2, Guiding Principles, Goals, and Actions and in the Design Guidelines related to wildfire management. These policies and actions would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Goals and Principles

Section 2.3.2 Chapter 4: Land Use

Goal LU-5: Plan, design, and create a resilient and wildfire resistive community: Implement a range of programs and practices for firefighter safety, community planning, landscaping, construction, and maintenance to protect people, property, and natural resources from wildland fire.

> **Action LU-5.1** – Directly consult with the City of Chico Fire Department (CFD) in the development of the VESP's firewise guidelines, building standards, and vegetative management standards (Section 4.5).
>
> **Action LU-5.2** – Utilize the Land Use Plan (Figure 4-1) to eliminate combustible development in areas of increased wildfire risk, such as heavily vegetated areas, steep terrain, and/or dramatic topographic features.
>
> **Action LU-5.3** – Plan infrastructure accordingly to increase wildland firefighting capabilities.
>
> **Action LU-5.4** – Utilize firewise construction pursuant to Chapter 7A of the California Building Code (CBC) to reduce structure ignition threat and retardant strategies to reduce the spread of structure fires along the Wildland-Urban Interface (WUI). Refer to Figure 4-5: Wildland-Urban Interface (WUI) Perimeter.

Action LU-5.5 – Promote residential energy storage for residents to provide back-up power to critical loads during power outages.

Action LU-5.6 – Provide for the reduction of surface and ladder fuels, as well as the creation and maintenance of fire breaks as proactive measures of vegetative management that reduces the threat and spread of wildland fires.

Action LU-5.7 – Create a 10'wide enhanced trail to serve as a fire break within the Regional Park along the northern boundary of the planning area abutting Stilson Canyon.

Firewise Guidelines specific to wildfire are provided in Section 4.14, Wildfire.

4.8.3 Impacts and Mitigation Measures

Methods of Analysis

The analysis of potential impacts associated with the use, transport, storage and handling of hazardous materials as well as potential impacts to public safety associated with any existing hazardous condition is primarily based on information from the Phase 1 ESA, the City, and other existing documentation used to establish the existing conditions. In determining the level of significance, the analysis assumes that the proposed project would comply with all applicable state and local ordinances and regulations.

Impacts of the environment on a project or plan (as opposed to impacts of a project or plan on the environment) are beyond the scope of required CEQA review. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473.) However, some impacts on the project are addressed for informational purposes, such as hazardous emissions or handling of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

As noted earlier, potential hazards and associated impacts related to TAC emissions are discussed in Section 4.2, Air Quality. Hazardous conditions associated with unstable soils and potential seismic events are discussed in Section 4.6, Geology and Soils. Potential hazards associated with an increase in traffic volumes in and around the project site are addressed in Section 4.13, Transportation and Circulation. Potential hazards associated with flooding and emergency procedures in the event of a flood are discussed in Section 4.9, Hydrology, Water Quality and Drainage. Potential hazards associated with noise from aircraft is addressed in Section 4.10, Noise. Lastly, potential risks to people and structures as well as emergency access associated with wildland fires are evaluated in Section 4.14, Wildfire.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- 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 create a significant hazard to the public or the environment.
- For a project located within 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, result in a safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Threshold Significance Criteria not Applicable to the Proposed Project

Hazardous Materials Sites Government Code Section 65962.5

The project site is not included on any list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. EDR conducted a records search for active sites where releases or spills of hazardous materials have occurred within a one-half mile radius hydrogeologically upgradient of the project site, as well as a search for facilities up to 2.125 miles from the site that are known to have environmental concerns or have permits to generate, handle, store, or dispose of hazardous materials. The project site was not listed in any of the computerized regulatory databases searched by EDR and was not on a list of sites complied pursuant to California Government Code Section 65962.5. No offsite properties with the potential to affect environmental conditions at the project site were identified and there are no records related to hazardous materials handling, storage, or incidents at the project site. Thus, there would be no impact and this issue is not further addressed.

Airport Land Use Plan

The project site is not located within an airport land use plan nor is it located within two miles of a public airport or public use airport. The closest airport is the Chico Municipal Airport, located approximately 6.0 miles northwest of the project site. Thus, there would be no impact related to airport hazards and this issue is not further addressed.

Project Impacts

4.8-1 The proposed project could create a hazard through the routine transport, use, or disposal of hazardous materials.

The proposed project would involve the construction of new buildings, and demolition of the existing barns associated with the former ranch. Relatively small amounts of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents would be used during construction of the proposed project. These materials are not considered acutely hazardous and are routinely used in construction projects. Use of these materials for their intended purpose during construction would not pose a significant risk to the public or environment. In addition, materials handled would not pose a significant risk to adjacent residents

or construction workers because the Contractor would be required to ensure these materials would be used and stored in accordance with existing laws and regulations These materials would be used and stored in designated construction staging areas within the boundaries of the project site and would be transported, handled, and disposed of in accordance with all applicable federal, state, and local laws and regulations, including the SWPPP, which requires plans to be prepared in the event of any spill or other accidental release of hazardous materials.

The Phase I ESA did not note any evidence of petroleum hydrocarbon products, chemical usage, stained soils, volatile organic compounds, naturally occurring asbestos, radon gas, or other hazardous wastes or materials.

The Phase I ESA did indicate the potential for asbestos-containing materials and lead-based paint to be present in the remaining buildings within the former ranch. Removal of these structures, as well as transportation and disposal of the building materials could potentially cause a release of these materials to the environment. Federal law requires (40 CFR § 61.145) that prior to demolition activities buildings to be removed need to be tested for the presence of asbestos. Cal/OSHA is the agency responsible for enforcement of the construction safety orders of 8 CCR 1529 and 1532 related to asbestos and lead paint removal and cleanup. Section 1529 regulates construction-related asbestos exposure involving demolition of structures, removal of asbestos-containing materials, asbestos clean-up, or excavation activities, which may involve exposure to asbestos. Section 1532.1 addresses specific measures for construction workers to take if exposed to sources that contain lead, including lead-based paint. As mentioned previously, all potentially hazardous substances would be handled in accordance with federal, state, and local regulations. This includes those from the Cal/OSHA and the EPA. As discussed in the Regulatory Setting, the EPA and Cal/OSHA include regulations and requirements for the demolition of buildings with ACMs, which includes using construction workers trained in the removal of ACMs. The regulations require work practice standards that control asbestos emissions. Work practice standards under the EPA for air toxics regulations would include removing all asbestos-containing materials, adequately wetting all regulated asbestos-containing materials, sealing the material in leak tight containers and disposing of the asbestos-containing waste material as expediently as practicable. Work practice standards for Cal/OSHA are similar to the EPA, but also include the presence of an asbestos competent person for monitoring during all demolition activities, HEPA filter dust collection systems, and ventilation of enclosed or isolated areas. Additional work practices related to ACMs would be implemented where appropriate. This includes requiring proper signs be posted on the construction site, containment of asbestos dust, adequate wetting and waste handling and removal standards. Because the buildings slated for demolition have not been surveyed for the presence of ACM or lead paint and could create a hazard associated with proper disposal this would be a **potentially significant impact**.

Hazardous materials that would be used once the proposed project is constructed would primarily consist of materials required for maintenance of buildings and surrounding landscaping and any common household hazardous wastes used by residents, such as paints, cleansers, pesticides, and fertilizers. Through compliance with the label instructions provided that describes proper usage, storage and disposal, implementation of the proposed project would not create a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials. In addition, all SWPPPs must have a spill response and implementation element which requires, among other things, that appropriate spill response personnel are assigned and trained, and that equipment and materials for cleanup of spills (i.e., spill kits) shall be available on site. Given implementation of existing laws and regulations, the impact associated with leaks and/or spills of construction site materials would be **less than significant**.

Mitigation Measures

Mitigation Measure HAZ-1 would require a hazardous material building survey to determine whether ACMs and lead-based paints are present within the former ranch buildings slated for removal. If found, all of the aforementioned actions and precautions would be followed during construction and demolition. The below mitigation measure would ensure that in the event any ACMs or lead-based paints are present, abatement procedures would be included to ensure the impact is reduced to a **less-than-significant level**.

HAZ-1: **Hazardous Building Survey.** Prior to demolition and removal of the former ranch buildings, the project developer or contractor shall retain a licensed hazardous remediation contractor to conduct a hazardous materials building survey to determine if asbestos-containing materials and/or lead-based paints are present. A report documenting material types, conditions and general quantities shall be provided, along with photos of positive materials and diagrams. Should these materials be present, demolition plans and contract specifications shall incorporate any abatement procedures consistent with federal, State and local requirements specific to the removal and proper disposal of materials containing asbestos or lead-based paint. All materials shall be abated in accordance with local, State, and federal requirements by a licensed abatement contractor. Applicable regulations include but are not limited to those of the EPA and Cal/OSHA.

4.8-2 The proposed project could create a hazard through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The proposed project does not include any industrial or similar land uses that could be expected to generate or use hazardous materials during its operation. However, hazardous materials may be used and stored at the project site during construction, including paints, solvents, greases, motor oil, and other construction-related materials. Potential adverse impacts associated with use of these types of materials involve the exposure of construction workers and/or the environment to hazardous materials from accidental release.

The project would be required to comply with the City's General Plan policies and actions, including Policy S-8.1 which supports efforts to reduce the potential for accidental releases of toxic and hazardous substances. This policy is supported by Action S-8.1.1, which requires CalOES, DTSC, California Highway Patrol, Butte County, and all other agencies be consulted relevant to hazardous materials routing and incident response programs.

In addition to compliance with the General Plan, the proposed project would be required to prepare a SWPPP as part of the Construction General permit, in accordance with Section 15.50.060 of the City's Municipal Code and as per the requirements of the NPDES Construction General Permit. The SWPPP prescribes best management practices (BMPs) to prevent non-storm water discharges to the storm drain system, thus protecting and enhancing the water quality of the city, and the health, safety and general welfare of its citizens (see Section 4.9, Hydrology, Water Quality, and Drainage, for further discussion). The SWPPP requires plans to be prepared in the event of any spill or other accidental release of hazardous material. The SWPPP would include comprehensive handling and management procedures for building materials, especially for those that are hazardous or toxic. Paints, solvents, pesticides, fuels, oils, or any other hazardous materials or building materials with the potential to contaminate stormwater would be stored indoors or under cover whenever possible, or in areas with secondary containment. Secondary containment methods, including dikes, berms, and curbing, would prevent a spill from spreading across the site and would ensure the protection of ground water. Staging areas would be designated for activities such as fueling vehicles, mixing paints, and plaster to

monitor the use of materials and to clean up any spills. As part of the SWPPP, methods would be identified to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and response. The plan would also specify material handling procedures and storage. All employees and subcontractors would be trained to ensure successful implementation of BMPs, and greater awareness of hazardous materials management.

No upset or accident conditions resulting in the release of hazardous material into the environment can be reasonably expected to occur during project construction or operation. In addition, compliance with the aforementioned measures, including the SWPPP, BMPs and all applicable local and state regulations, would ensure that impacts related to the release of hazardous material due to an upset or accident conditions would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.8-3 The proposed project could emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Children are considered sensitive receptors as they are more susceptible to health effects from exposure to hazardous materials than adults. Thus, potential health effects to these populations must be considered when the use of hazardous materials is involved in a project. The closest existing school is Little Chico Creek Elementary, located approximately 1.2 miles northwest of the intersection of East 20th Street and the Steve Harrison Memorial Bike Path. As this school site is more than one-quarter mile away from the proposed project site, it is highly unlikely that this school, or any other existing schools, would be exposed to hazardous emissions or materials from the proposed project.

The proposed project includes an approximately 10-acre site for a new elementary school, located within the 19 acres planned for Public Quasi Public (V-PQ) use, adjacent to the proposed Community Park site. While this proposed elementary school would be located within the project site, it is unlikely it would be exposed to any hazardous emissions, materials, substances, or waste associated with project land uses. Development of the school site would not occur until after a majority of the plan area is developed. As discussed in Impact 4.8-1 and Impact 4.8-2, the proposed project would not include any operational uses that would generate large amounts of hazardous materials. The only potentially hazardous materials that would be used once the proposed project is constructed would consist of materials required for maintenance of buildings and surrounding landscaping, and any common household hazardous wastes used by residents (e.g. paints, cleansers, pesticides, and fertilizers).

Hazardous materials may be used and stored at the project site during construction, including paints, solvents, greases, motor oil, and other construction-related materials. However, the handling of potentially hazardous substances is highly regulated by federal, state, and local agencies, including Cal/OSHA, the California Department of Public Health, CalRecycle, and DTSC. For example, DTSC's Brownfields Restoration and School Evaluation Branch is responsible for assessing, investigating, and cleaning up proposed school sites to ensure that school sites are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who would occupy the new school (DTSC 2020).

Through compliance with applicable laws and regulations, including the City's General Plan policies, implementation of the proposed project would not create a significant hazard to the future proposed on-site school. Thus, the proposed project would have a **less-than-significant impact** on schools related to emitting hazardous emissions or handling hazardous materials or substances.

Mitigation Measures

No mitigation measures are required.

4.8-4 The proposed project could impair implementation of an adopted emergency response plan or emergency evacuation plan.

See Section 4.14, Wildfire, for a detailed discussion on emergency response. Impact 4.14-1 addresses if the project could impair implementation of an adopted emergency response plan or emergency evacuation plan in the event of a wildfire. The City has established a number of agreements and procedures regarding response to emergency situations. This includes standard emergency response procedures in line with the CalOES Standard Emergency Management System program and identifies mutual aid agreements for emergency assistance including with Butte County and CAL FIRE. The General Plan identifies Highway 99 and Highway 32 as emergency routes for evacuation within the City. Access points to both Highway 99 and Highway 32 are located approximately 1.3 miles from the intersection of E. 20th Street and the Bike Path. Access to Highway 99 and Highway 32 would be provided through the project's new roadways that would connect to E. 20th Street and Skyway. During construction and buildout of the plan area, appropriate coordination with the Chico Fire Department (CFD), Chico Police Department (CPD), and, if necessary the California Highway Patrol would be initiated to ensure emergency vehicle access is not impaired along local roadways and is maintained through construction areas.

As discussed under Impact 4.14-1, the proposed project has been designed in collaboration with the CFD to ensure adequate emergency response and evacuation procedures are in place in the event of a wildfire or any other emergent condition, and that the project does not adversely affect implementation of the Butte County Local Hazard Mitigation Plan, the multi-jurisdictional Emergency Operations Plan (EOP), or the City's Emergency Response procedures. Thus, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and impacts would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.8-5 The proposed project could expose people or structures to loss, injury or death involving wildland fires.

See Section 4.14, Wildfire, for a detailed discussion on hazards involving wildland fires that could expose people or structures to loss, injury or death. Impact 4.14-2 addresses potential wildfire risks associated with building a residential community within the Wildland Urban Interface area or WUI.

As discussed under Impact 4.14-2, the proposed project would provide for a residential population along with commercial uses within a Moderate Fire Hazard Zone in a WUI Area where fires have occurred in 1999, 2007, and 2018. Given the introduction of commercial and residential uses there is the potential for accidental or naturally occurring fires (e.g., lighting) to result exposing future residents to the risk of potential wildfire hazards. This is

considered a **potentially significant impact**. Compliance with Mitigation Measure WFIRE-1 requires preparation of a construction fire prevention plan to address training construction workers and proper fire suppression procedures in the event a fire is started during construction. Mitigation Measure WFIRE-2 calls for amending the VESP's Firewise Guidelines to further minimize risks associated with wildland fires during project operation.

Mitigation Measures

See Mitigation Measures WFIRE-1 and WFIRE-2 in Section 4.14, Wildfire. Compliance with these mitigation measures would ensure exposure of people or structures to hazards associated with wildland fires during construction and operation would be reduced to **less than significant**.

Cumulative Impacts

The geographic context to evaluate cumulative hazards and hazardous materials impacts would include future buildout of the City of Chico, including the SOI under the 2030 General Plan.

The cumulative context for the analysis of potential hazardous materials impacts (including hazardous materials usage during construction, or exposure to asbestos-containing materials) is generally site-specific, rather than cumulative in nature. Compliance with all applicable federal, state, and local regulations related to hazards and hazardous materials on a project-by-project basis would be required for all projects within the City. Therefore, these issues are not addressed in the cumulative impact analysis. Hazardous materials incidents or accidents involving spills or inadvertent releases would also typically be site-specific and would not be additive to effects from incidents occurring elsewhere. Associated health and safety risks generally would be limited to those individuals using the materials or to persons in the immediate vicinity of the materials. Therefore, these issues are not addressed in the cumulative impact analysis. The reader is referred to Section 4.14, Wildfire, for a detailed discussion on cumulative impacts associated with emergency response and hazards involving wildland fires that could expose people or structures to loss, injury or death.

4.8-6 The proposed project could contribute to a cumulative increase in the potential exposure of people to hazards associated with the use and transport of hazardous materials.

The cumulative context for the use, handling, storage, and transport of hazardous materials is the City limits, including the SOI, during project construction and for the duration of project operation. Adverse effects of hazards and hazardous materials tend to be localized and not cumulative by nature, as impacts generally vary by land use and site characteristics. Therefore, the areas closest to the project site would be most affected by project activities. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to hazards and hazardous materials and did not identify an existing cumulative impact because of the localized nature of hazards and hazardous materials impacts. Thus, there is no existing cumulatively significant impact in this regard.

Hazards and hazardous materials are extensively regulated at the federal, state and local levels. While there are industrial uses (including an asphalt plant) to the south near the proposed project site, the site is physically separated from adjacent areas to the south by Honey Run Road and Skyway. With the implementation of applicable plans and policies, the proposed project would not create or be subject to hazards or hazardous material impacts from use or transport, and would not result in a cumulatively considerable contribution when considered in combination with the impacts of nearby projects. Therefore, the proposed project would not have a significant contribution to any potential cumulative impacts and impacts would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.8.4 References

Butte County. 2011. Butte County Operational Area Emergency Operations Plan. February 2011. Accessed February 6, 2020. http://www.buttecounty.net/cob/Agendas/2011/Agenda_031511/3.10.pdf

Butte County. 2019. Butte County Local Hazard Mitigation Plan Update. October 2019. Accessed February 6, 2020. https://www.buttecounty.net/Portals/19/LHMP/2019/LHMPUpdateExecSummaryTOC.pdf ?ver=2019-11-13-121934-960

CAL FIRE (California Department of Forestry and Fire Protection). 2007. Butte County Fire Hazard Severity Zones in SRA. Adopted on November 7, 2007. https://osfm.fire.ca.gov/media/6652/fhszs_map4.pdf

City of Chico. 2017. Chico 2030 General Plan. Adopted April 2011, Amended March 2017.

DTSC (Department of Toxic Substances Control). 2020. "Evaluating & Cleaning-Up School Sites". Accessed February 6, 2020. https://dtsc.ca.gov/evaluating-cleaning-up-school-sites/

PHMSA (Pipeline and Hazardous Materials Safety Administration). 2019. National Pipeline Mapping System (NPMS) Public Viewer. Available at: https://pvnpms.phmsa.dot.gov/PublicViewer/

USGS (U.S. Geological Survey). 2012. Chico Quadrangle 7.5-Minute Series Topographic Map. https://www.sciencebase.gov/catalog/item/5825fbd0e4b01fad86e65e78

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4.9 Hydrology, Water Quality, Drainage

4.9.0 Introduction

This section describes potential adverse effects of the Valley's Edge Specific Plan (proposed project or VESP) on hydrology, water quality, drainage, and groundwater resources. Potential effects evaluated include those associated with grading and drainage changes from the proposed project, groundwater recharge, groundwater use, water quality, and stormwater runoff. Included in this discussion is a description of the existing environmental setting, and a summary of applicable laws, regulations, and agencies responsible for their implementation and oversight. Potential hazards associated with geology are discussed in Section 4.6, Geology and Soils. Potential impacts to utility infrastructure are addressed in Section 4.12, Public Utilities.

Comments received in response to the Notice of Preparation (NOP) include concerns associated with hydrological changes and impacts to drainage patterns from development of the proposed project, including the potential for erosion, sedimentation, and flooding on- and off-site. Commenters noted that the drainages surrounding the project site already experience capacity issues and that flooding is an existing condition on the project site and in surrounding areas. Additionally, commenters raised the question of whether flood hazards are greater since the 2018 Camp Fire, which affected a large portion of the project site. Commenters have requested that flood maps reflecting current conditions on the site be presented and analyzed.

Groundwater recharge, use, and supply comments were also raised. Specifically, commenters were concerned about the increased impervious surfaces and development of the project site would reduce groundwater recharge and increased uses would deplete groundwater supplies. Commenters asked if water discharged into the onsite lake would be treated prior to discharge and if the lake would remain filled during the dry months. These issues are identified and addressed in this EIR section. See Appendix A for a copy of the NOP and complete list of public comments received during the public scoping period.

Sources reviewed to prepare this section include a Water Supply Assessment prepared by EKI Environment & Water Inc. (April 15, 2020) included as Appendix J; Draft Drainage Study prepared by FRAYJi Design Group (February 25, 2020) included as Appendix H-1, Reach 1 Drainage Addendum Memo (June 8, 2021); Appendix H-2, Reach 5-6 Drainage Addendum Memo (June 8, 2021); Appendix H-3, Reach 5-6 Proposed Detention Basin Exhibit (June 2, 2021); Appendix H-4, Drainage Report Addendum #1 (September 14, 2021); Appendix H-5, Preliminary Geotechnical Investigation Report (February 27, 2019); Appendix E, Preliminary Hydrogeologic Assessment (May 21, 2010; GeoPlus 2010); Phase I Environmental Site Assessment (June 20, 2019) included as Appendix G; and public agency reports, web map viewers, and databases. This includes U.S. Geological Survey (USGS) hydrography data, U.S. Department of Agriculture (USDA) soils data, California Department of Water Resources (DWR) groundwater resource information, State Water Resources Control Board (SWRCB) water resource data, and flood information from the Federal Emergency Management Agency (FEMA) and the Central Valley Flood Protection Board (CVFPB).

4.9.1 Environmental Setting

Surface Water Resources

Surface waters are categorized by their characteristics as rivers, streams, reservoirs, lakes, and wetlands. Streams are further categorized into ephemeral[1], intermittent[2], perennial[3], and/or headwater.[4] Surface water resources in Butte County lie within the Sacramento River watershed. The primary waterways in the County include the Feather River (about 16 miles to the south-southeast) and its tributaries, as well as Butte Creek (just south of the project site) and Big Chico Creek (which passes as close as 2 miles to the northwest). The majority of the surface water supply used by Butte County residents and businesses originates in the Feather River watershed and accumulates in Lake Oroville as part of the State Water Project.

Regional Watercourses and Watersheds

In managing water resources, the SWRCB and the local governments classify watersheds in a hierarchical system. These geographic boundaries are watershed based, but are typically referred to as hydrologic basins and are defined in the Water Quality Control Plan for the Central Valley Region (Central Valley RWQCB 2018). These generally constitute the geographic basis around which many surface water quality problems and goals/objectives are defined. The project site is within the Central Valley Regional Water Quality Control Board (RWQCB) (Region 5), within the Colusa Basin Hydrologic Unit, within the Butte Basin HA Hydrologic Area (Table 4.9-1) (Central Valley RWQCB 1986).

In addition to the agency-designated watershed areas described above, site-specific watershed areas were delineated to support the Draft Drainage Study prepared for the VESP (see Appendix H-1). The total watershed area that contributes to the downstream boundaries of the proposed project consists of a total 3,900 acres divided into 7 distinct watershed areas, as shown in Table 4.9-2. Of this area, 1,448 acres is on-site and the remaining 2,449 acres consists of off-site / upstream areas that contributes inflow from the eastern boundary of the proposed project (Appendix H-1). Site-specific watershed areas identified in the Draft Drainage Study, along with corresponding drainage reach numbers used in the hydrologic analysis (see Section 4.9.3, Impacts and Mitigation Measures), are shown in Figure 4.9-1.

Table 4.9-1. Watershed Designations by Agency/Source

Agency/Source	HUC/Basin No.	Analysis Scale	Name/Description	Size (Sq. Mi.)
Water Quality Control Plan for the Central Valley Region	5	RWQCB Region	Central Valley	18,000
	520	Hydrologic Unit	Colusa Basin	3,000
	520.40	Hydrologic Area	Butte Basin HA	400

Notes: HUC = hydrologic unit code; sq. mi. = square miles.
Sources: Central Valley RWQCB 2018.

1 Streams that flow briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the local groundwater table are considered ephemeral.
2 Streams where portions flow continuously only at certain times of the year or seasonally are referred to as intermittent.
3 Streams which flow year-round are considered a permanent (perennial) stream. Generally, perennial stream flow outside of the rainy season is maintained by groundwater seeps and springs located along the streambank or higher up in the watershed.
4 Headwaters are usually small streams at the top of a watershed.

Table 4.9-2. Pre-Project Drainage Areas (On-Site and Off-site/Upstream)

Watershed Area Designation	On-Site Area (Acres)	Offsite/Upstream Area (Acres)	Total Area (Acres)	VESP Map Reference	Description
A	60	0	60	North Drainage Shed	Areas draining north toward Stilson Canyon and Little Chico Creek. Will remain undeveloped.
B	132	4	136	Middle Drainage Subshed	These watershed areas drain unnamed ephemeral drainages to the east of Dawncrest Drive, through culverts past the Steve Harrison Memorial Bike Path (Potter Road) and Skyway, and eventually confluence with the Butte Creek Diversion Channel.
C	383	399	782		
D	395	0	395	South Drainage Subshed	
E	30	0	30	Comanche Creek Drainage Subshed	Comanche Creek Watershed upstream of Skyway Road
F	380	2,029	2,409		
G	62	18	80		Areas draining south to Comanche and/or Butte Creek. Will remain undeveloped.

Source: Appendix H-1.
Note: Figure 6-3, Existing Shed Map, of the VESP also depicts the watersheds within the VESP area. Watershed area A in this table and in Figure 4.9-1 corresponds to the North Drainage Shed in Figure 6-3 of the VESP. Watershed areas B and C correspond to the Middle Drainage Shed in Figure 6-3 of the VESP. Watershed area D corresponds to the South Drainage Shed in Figure 6-3 of the VESP. And watershed areas E, F, and G correspond to the Comanche Creek Drainage Shed in Figure 6-3 of the VESP.

The on-site watershed areas described in Table 4.9-2 and shown in Figure 4.9-1 are drained by four intermittent/seasonal creeks that flow westward across the site, as identified by the Draft Drainage Study for the proposed project (Appendix H-1). The largest and only named on-site drainage is Comanche Creek (also known as Edgar Slough), which crosses the southeastern portion of the proposed project site and forks into two branches upstream at the eastern edge of the site (Comanche Creek and its two forks are counted as one). Downstream of the project site, Comanche Creek flows year-round due to the diversion of waters from Butte Creek into the creek for conveyance to agricultural users to the west of the City (City of Chico 2010). The other intermittent drainages, located north of Comanche Creek, are unnamed and all eventually converge off-site west of the Steve Harrison Memorial Bike Path (Bike Path - formerly Potter Road). Collectively, these four creeks convey runoff from the majority of the project area and from the larger off-site area to the east.

Both Little Chico Creek and Butte Creek are important regional waterways whose canyon edges are coincident with parts of the project's northern and southern boundary, respectively. Though neither Little Chico Creek nor Butte Creek intersect the project site, small areas to remain undeveloped (watersheds A and G in Table 4.9-2 and Figure 4.9-1) drain directly to these regional waterways. The Butte Creek Diversion Cannel, which diverts flow from Little Chico Creek to Butte Creek, flows southward west of the Bike Path, and also collects flow from the unnamed drainages (Figure 4.9-1). Comanche Creek intersects Little Chico Creek before Little Chico Creek reaches the Sacramento River. Both Little Chico Creek and Butte Creek, and all creeks that cross the project site, are tributaries to the Sacramento River.

Site Topography, Soils and Drainage

The timing, frequency and volume of runoff in response to precipitation within a watershed depends on numerous factors, namely relief/slopes; geology and soils (e.g., infiltration); and land cover characteristics (e.g., vegetation and impervious surfaces), all of which influence the degree to which precipitation percolates into the soil versus running off into area creeks and drainages. The topography of the site includes rolling foothills and ridges, and slopes from the hills on the east, westward towards the valley floor. Two broad buttes[5] dominate the site topography between Comanche Creek and the central drainage, and between the northern drainage and the north boundary of the site.

As described in Chapter 2, Project Description, and shown in Figure 4.9-1, the site elevation ranges from a high of 580 feet above mean sea level (amsl) at the northeast corner to a low of about 250 feet amsl near the southwest corner. The predominant slope gradients on the project site are less than 5%, increasing to 5 to 15% along the side-slopes of the creek drainages (USGS 2018). Where outcrops of volcanic rock protrude in thin strips along the valley edges of Little Chico Creek, Comanche Creek, and Butte Creek, slopes locally exceed 15%, up to a maximum of 40% (USGS 2018).

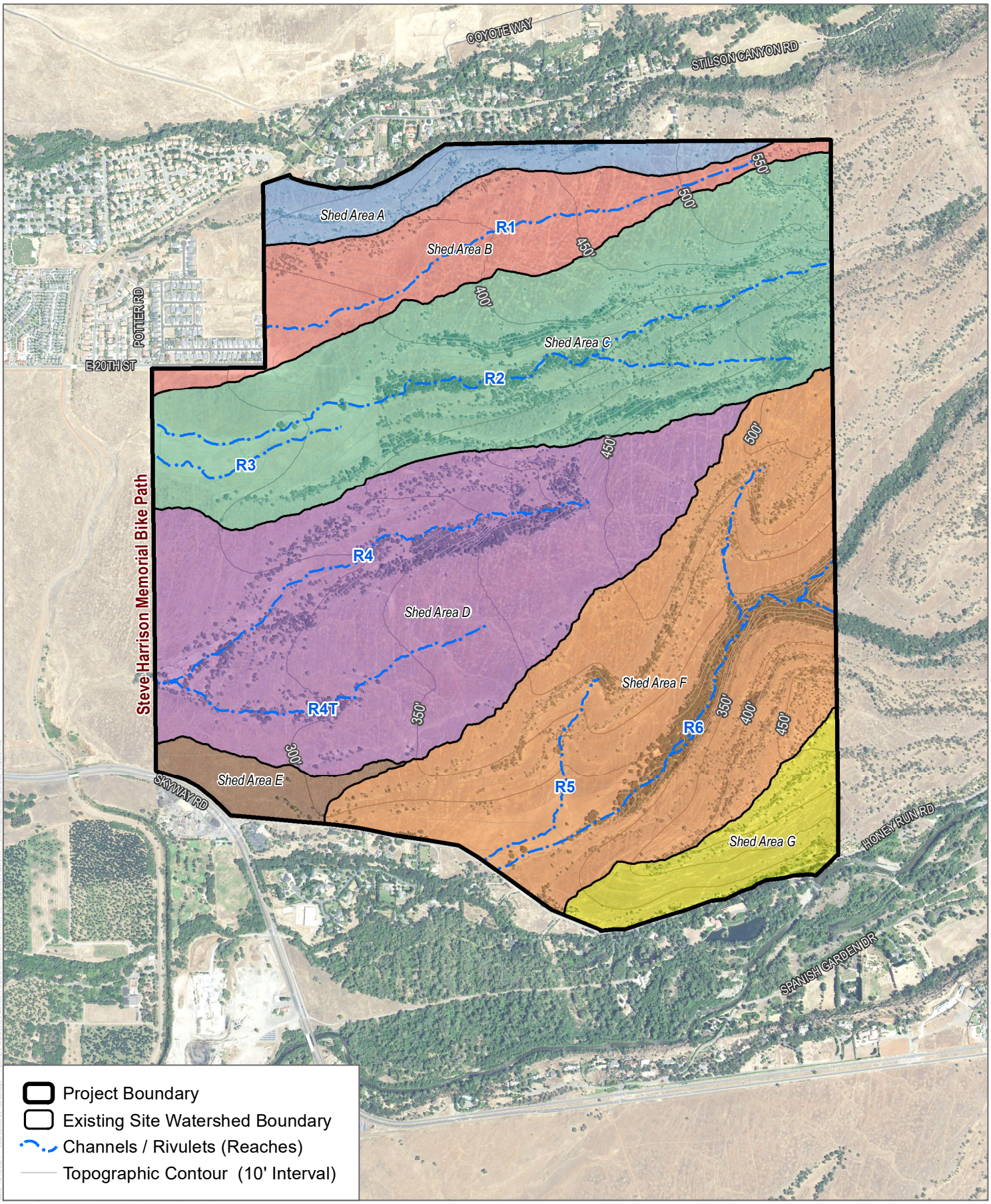
Land cover predominantly consists of annual grassland (939 acres) with patches of foothill pine woodland (486 acres), with corridors of riparian woodland (13 acres) along the on-site drainages. There are few if any impervious surfaces or appreciable developed uses on the site (limited to dirt roads and trails).

The United States Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) online Web Soil Survey system was used to identify soil types and characteristics (e.g., soil properties, qualities, erosion susceptibility, groundwater sources, vegetation data, and other physical and chemical soil properties). The project site consists of 12 soil types with the dominant soil type (95%) consisting of the "Doemill-Jokerst" and "Jokerst-Doemill Typic Haploxeralfs" soils, which are predominantly cobbly loam (see Table 4.6-2, Section 4.6, Geology and Soils). Soil types and vegetation determine the susceptibility of erosion and sedimentation potential that future development would have on a site. Hydrologic soil groups are based on estimates of runoff potential that each soil type has based on physical and chemical attributes and are categorized as Groups A through D in order of decreasing rate of water infiltration. The majority of the project site consists of group D soils (approximately 95% of the site),[6] which have a very slow infiltration rate and high runoff rates (NRCS 2019).

Based on the topography, soil and land cover characteristics of the site, there is a relatively rapid response to precipitation in area creeks and drainages, though runoff is expected to dissipate shortly after storms except for the drainages with larger watersheds such as Comanche Creek.

[5] A butte is a flat-topped landform whose outer edges are marked by stream canyons and/or cliffs, and in the project area, are formed by uplift and subsequent erosion of the Tuscan Formation. Butte County gets its name from this geomorphic structure which dominates the lower foothills of the northern Sierras.

[6] Soils in Hydrologic Group D have a very slow infiltration rate (high runoff potential). Soils in this group consist of clay-type coils, high shrink-swell potential, areas with a high-water table, claypan near the surface, and soils that are shallow over impervious surfaces (like bedrock).



SOURCE: USDA 2016, USGS NHD 2018, Frayji Design Group 2020

DUDEK

0 750 1,500 Feet

FIGURE 4.9-1

Existing Site Watersheds and Drainages

Valley's Edge Specific Plan Project

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Peak Flow Runoff Rates and Volumes

The site-specific watershed delineations and the land cover characteristics of the site discussed above were incorporated into a variety of models and analysis tools to quantify the peak flow rates under various storm scenarios (i.e., the 2 year, 10 year and 100 year storm events) for the undeveloped site (Appendix H-1). These include the HEC-HMS hydrology and a HEC-RAS hydraulic models[7], and the Autodesk-Storm and Sanitary Analysis (SSA) software. Table 4.9-3 summarizes the results of the pre-developed (i.e., baseline) analysis for the 10-year and 100-year storm events, and includes runoff produced from the proposed project site along with the upstream watershed areas, shown in Table 4.9-2. The analysis focused on important points of interest consisting of places along drainages where the cross-sectional area is constricted due to culverts and road crossings, as well as the proposed project site's nine major discharge points where surface water flows off the project site. Four major discharge points along the western boundary of the site were identified that capture the majority of the surface runoff from the site and upstream watershed. The analysis found that due to either insufficient culvert capacity or existing culvert blockage, culvert crossings were insufficient to pass the flow expected under all storm scenarios (2-, 10-, and 100-year storm events), except at Dawncrest Drive (in the Belvedere Subdivision), where two existing culverts are able to pass the 2-year and 10-year storm events. Flow was modeled to overtop the Bike Path and Honey Run Road in the 2-year peak storm scenario, and Dawncrest Drive in the 100-year peak-storm scenario (Appendix H-1). The modeling shows that the inadequate culvert capacity also causes channel backwater effects upstream of roadway crossings, increasing the depth and extent of flooding that would otherwise occur in the absence of road crossings and culverts.

Table 4.9-3. Pre-Developed Peak Flow Rates and Volumes

Metric	10-Year Storm Event	100-Year Storm Event
Rate (cfs)	4,329	6,849
Volume (AF)	1,093	1,697

Source: Appendix H-1.
Notes: csf = cubic feet per second, AF = acre-feet. Flow calculations broken down by individual watershed and subwatershed areas are provided in Appendix H-1.

Surface Water Quality

Several water bodies downstream of the project site—namely the Sacramento River and Butte Creek—are designated as "impaired" under Section 303(d) of the federal Clean Water Act (CWA) (see Table 4.10-4, CWA Section 303(d) Impairments). Being impaired (also known as "water quality-limited") means that a water body is "not reasonably expected to attain or maintain water quality standards" without additional regulation. The law requires that the U.S. Environmental Protection Agency (EPA) develop total maximum daily loads (TMDLs) for each impaired water body in the nation. The TMDLs specify the maximum amount of a pollutant a water body can receive and still meet water quality standards. None of the water bodies listed as impaired under CWA Section 303(d) occur within the project site, and no TMDL has currently been developed to address the impairments identified for Butte Creek or the Sacramento River.

[7] The Hydrologic Engineering Center (HEC) of the U.S. Army Corps of Engineers provides the Hydrologic Modeling System (HMS) and River Analysis System (RAS) to describe the physical properties of river basins, the meteorology that occurs on them, and the resulting runoff and streamflow that are produced.

Table 4.9-4 lists the 303(d) impairments for Butte Creek, the Sacramento River (Red Bluff to Knights Landing), the Sacramento River (from Knights Landing to the Delta), and the Sacramento San Joaquin Delta. The impairments generally relate to agricultural chemicals that are no longer used or authorized and historic mining activities in the Sierra Foothills. In general, water in the Sacramento River and its major tributaries is of good quality; largely melted snow that collects in upstream reservoirs and is released according to various operating rules (Northern Sacramento Valley Group 2020). Residual mercury concentrations bio-accumulating in fish tissue have been a persistent problem in the region's waterways, particularly in lakes and reservoirs, which lead to the listing of mercury as a CWA Section 303(d) impairment (Northern Sacramento Valley Group 2020). It is generally considered the most serious water quality problem in the Sacramento River. Otherwise, urban runoff is a potential source of contaminants in waterways downstream of urban areas and affects water quality in the Sacramento River and local creek downstream of urban areas. Although there is no water quality testing data presently available for the stream reaches that cross the proposed project site, the undeveloped nature of the watershed contributing to the site means water quality is likely of good quality, and representative of natural conditions.

Table 4.9-4. CWA Section 303(d) Impairments

Name	Pollutant/Stressor	Potential Sources	TMDL Status
Butte Creek	pH	Source Unknown	TMDL Required
	Mercury	Source Unknown	TMDL Required
Comanche Creek	No listed impairments	N/A	N/A
Little Chico Creek	No listed impairments	N/A	N/A
Sacramento River (Red Bluff to Knights Landing)	DDT	Source Unknown	TMDL Required
	Dieldrin	Source Unknown	TMDL Required
	Mercury	Source Unknown	TMDL Required
	Polychlorinated Biphenyls (PCBs)	Source Unknown	TMDL Required
	Toxicity	Source Unknown	TMDL Required
Sacramento River (Knights Landing to the Delta)	Chlordane	Source Unknown	TMDL Required
	DDT	Source Unknown	TMDL Required
	Dieldrin	Source Unknown	TMDL Required
	Mercury	Source Unknown	TMDL Required
	Polychlorinated Biphenyls (PCBs)	Source Unknown	TMDL Required
	Toxicity	Source Unknown	TMDL Required
Sacramento San Joaquin Delta	Chlordane	Source Unknown	TMDL Required
	DDT	Source Unknown	TMDL Required
	Dieldrin	Source Unknown	TMDL Required
	Dioxin (Including 2,3,7,8-TCDD)	Source Unknown	TMDL Required
	Furan Compounds	Source Unknown	TMDL Required

Source: SWRCB 2017.
Notes: CWA = Clean Water Act; TMDL = total maximum daily load; DDT = Dichlorodiphenyltrichloroethane; PCBs = polychlorinated biphenyls.

Hydrologic Hazards

Localized Flooding

The National Oceanic and Atmospheric Administration (NOAA) records precipitation in order to map trends and follow climate changes and cycles. In 2019, NOAA recorded that the City had normal to slightly above normal rainfall amounts (approximately 2-4% higher than a normal year) (NOAA 2020). However, during January 2019, above normal precipitation occurred in short periods. The occurrence of localized flooding is consistent with the Draft Drainage Study (Appendix H-1) which found that several storm scenarios (greater than a 2-year storm event) obstructed and/or undersized culverts would result in overtopping of local roadways.

Special Flood Hazard Areas

Flood zones identified on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) are identified as a Special Flood Hazard Area. A Special Flood Hazard Area is defined as the area that will be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. The 1%-annual-chance flood is also referred to as the base flood or 100-year flood. "Floodways" are areas within the Special Flood Hazard Area that include the channel of a river/watercourse and adjacent land areas which in an unobstructed condition can discharge a 100-year flood/base flood without any increase in water surface elevations. The area outside the floodway but still within the 100-year floodplain can be obstructed without increasing the water surface elevation of a 100-year flood event more than 1 foot at any point.

FEMA has mapped Special Flood Hazard Areas near the project site on FIRM panel numbers 06007C0510E and 06007C0530E (effective January 6, 2011). While there are Special Flood Hazard Areas mapped along Little Chico Creek, the Butte Creek Diversion Channel, and Butte Creek, all of the Special Flood Hazard Areas along these creeks are located outside the boundaries of the proposed project. FEMA indicates that the proposed project area, including Comanche Creek, to be within Zone X (Area of Minimal Flood Hazard) (FEMA 2011). In addition, the project site is not within Central Valley Flood Protection Board (CVFPB)[8] jurisdiction, either by being within the Sacramento-San Joaquin Drainage District or affecting a levee (CVFPB 2020).

Although there are no FEMA Special Flood Hazard Areas mapped within the proposed project site, Comanche Creek and the unnamed creeks to its north are subject to inundation in a 100-year storm event. Appendix H-1 provides floodway mapping for the 2-, 10-, and 100-year storm events along Comanche Creek, and the unnamed streams that cross Dawncrest Drive, Bike Path, and Honey Run Road. The largest area of flooding occurs upstream of where the unnamed creek crosses the northern section of the Bike Path near its intersection with Doe Mill Road, where 100-year flooding is expected to occur along a 500- to 1,000-foot wide corridor extending up to a half mile upstream, where it narrows to the riparian corridor (Appendix H-1). As discussed above (Peak Flow Runoff Rates and Volumes), this is partially a result of backwater effects caused by a culvert with insufficient capacity.

[8] The CVFPB is the State's regulatory agency responsible for ensuring that appropriate standards are met for the construction, maintenance, and protection of the flood control systems within the Central Valley. CVFPB issues encroachment permits and works with other agencies to improve the flood protection structures, enforces removal of problematic encroachments, and keeps watch over the Central Valley's continually improving flood management systems.

In accordance with Senate Bill 1278, the California Department of Water Resources (DWR) has developed floodplain maps for 200-year flood events within the Sacramento-San Joaquin Valley watersheds. Based on available DWR mapping, no portion of the project site is mapped within a 200-year flood zone (DWR 2013).

Other Flood Hazards

There are no dams located upstream of the four intermittent drainages that cross the site. Although Little Chico Creek and Butte Creek could be subject to inundation due to failure of dams upstream within their watershed, neither of these creeks cross the project boundary. According to the analysis provided in Appendix H-1 and the Butte County Local Hazard Mitigation Plan Update (Butte County 2019), the project site is not within a dam failure inundation zone. Furthermore, due to the location of the project site hundreds of miles inland and due to the lack of large nearby lakes or reservoirs, the project site is not within an area prone to sea level rise, tsunami or seiche hazards.

Groundwater Resources

The availability of groundwater in an area depends largely upon its geologic, hydrologic, and climatic conditions. In Butte County, reserves of groundwater are found in the thick sedimentary deposits of the Sacramento Valley and the montane areas to the east and north. Groundwater is found in perched, unconfined and confined zones in the valley portion of the County. Change in groundwater storage is dependent on the annual rate of groundwater extraction and the annual rate of groundwater recharge. Groundwater typically declines seasonally in summer and fall, and recovers in the winter and spring, and also fluctuates over longer timeframes due to cycles of drought years and wet years.

The major sources of groundwater recharge in the County are precipitation, infiltration from streams, and deep percolation of applied irrigation water in agricultural areas. In 2010 a preliminary hydrogeologic assessment was conducted on the project site (GeoPlus 2010). The assessment found that:

- The predominant geologic material observed at the site is well lithified lahar rock of the Tuscan formation unit C. It is commonly known that the lahar is relatively impermeable and therefore restricts water transmission.
- Fractures observed in the lahar were generally discontinuous, tight and widely spaced which would not suggest the potential for active recharge. It can be expected that limited water migration could occur along these fractures; however, based on the tight fracture apertures and wide spacing between fractures, the volume and rate of water that could reach an underlying aquifer should not have a significant impact to groundwater quality or quantity. This conclusion is further supported by the great thickness of the lahar layers separating the drainage channels from underlying aquifers.
- Unit B of the Tuscan formation which underlies unit C is the primary aquifer unit of the formation and outcrops of this unit were not observed on-site. Furthermore, the basal tuff unit of unit C was not observed on-site either.
- Beds of poorly cemented granular geologic material were not observed in thicknesses or bedding attitudes conducive for groundwater recharge.
- Alluvial material that could potentially recharge shallow aquifers were of the site are limited to areas that have been excluded from proposed project development and are proposed to remain in their natural state. This use restriction should mitigate on-site impacts to groundwater recharge in these areas.

The Preliminary Geotechnical Investigation Report conducted in 2019 (Appendix E) supports these conclusions (GeoPlus 2019), which are also consistent with a recent Butte County groundwater recharge study, which found that recharge in the foothills is primarily derived from percolation directly into outcrops of the Lower Tuscan Formation, which do not occur on the project site (Brown and Caldwell 2017).

The proposed project would be included within the California Water Company's (Cal Water) Chico-Hamilton Service Area following annexation. Cal Water provides municipal water service to the City of Chico, primarily by pumping groundwater wells located throughout its service area. The information about groundwater resources in this section is primarily derived from the Water Supply Assessment for the proposed project, included as Appendix J.

Groundwater Basin Status

The project site is located within the Vina Subbasin of the Sacramento Valley Groundwater Basin (Department of Water Resources [DWR] Basin No. 5-021.57). The Vina Subbasin is designated by DWR as a "high priority" basin and under the Sustainable Groundwater Management Act (SGMA), will eventually (by January 31, 2022) be managed under a Groundwater Sustainability Plan (DWR 2020a). DWR's priority rating is based on estimates of population density, anticipated growth, well density, the amount of irrigated agriculture, the degree to which water demands are met from wells (versus surface water), and the existence of documented impacts (e.g., overdraft) (DWR 2020b). The main factors driving the high priority designation of the Vina Subbasin include population growth (4 out of 5 possible ranking points), production well density (5 out of 5 possible points), irrigated acreage per square mile (4 out of 5 possible points), and groundwater reliance (5 out of 5 possible points).

The Vina Groundwater Sustainability Agency (GSA) responsible for preparing a Groundwater Sustainability Plan under SGMA is comprised of Butte County, the City of Chico, and the Durham Irrigation District (DWR 2015). Prior to the formation of the Vina GSA, the member agencies were exclusive GSAs in the Vina Subbasin within their jurisdictional boundaries. The Vina GSA was created through a Joint Powers Agreement which conferred all SGMA authorities to the Vina GSA. The purpose of the Vina GSA is to (a) provide for the joint exercise of powers common to each of the Members and powers granted pursuant to SGMA (subject to the restrictions contained in this Agreement); (b) cooperatively carry out the purposes of SGMA; (c) become a GSA for purposes of management of the Vina Subbasin in accordance with SGMA; (d) develop, adopt, and implement a legally sufficient Groundwater Sustainability Plan for the Vina Subbasin in order to implement SGMA requirements and achieve the sustainability goals outlined in SGMA; (e) to enter into a Coordination Agreement (as applicable) with other GSAs in the Vina Subbasin to mutually achieve groundwater sustainability; and (f) to comply with any further legislative mandates that alter or amend SGMA within the Agency's jurisdiction (DWR 2015). From a basin-wide standpoint, it should be noted municipal well pumping necessary to serve Cal Water's Chico District represents less than 9% of the total pumping in the Vina, West Butte and East Butte "Inventory Units", defined by Butte County Department of Water Resource Conservation (Butte County Department of Water and Resource Conservation 2016).

The Vina GSA Groundwater Sustainability Plan is currently being drafted and only the chapter related to protocols for data collection and monitoring has been prepared (Vina GSA 2020).

Groundwater Hydrology

The Vina Subbasin covers an area of approximately 289 square miles and is bounded on the north by the Butte County/Tehama County line, on the east by the Chico Monocline, on the northwest by the Sacramento River and Big Chico Creek, and on the southwest and south (generally) by the northern boundary of the Western Canal Water District. The Vina Subbasin's extent was revised in 2018 through a SGMA Basin Boundary Modification process. The water-bearing formations within the Vina Subbasin consist of continental deposits ranging in age from recent/Holocene to late Tertiary (Pliocene). From shallowest (youngest) to deepest (oldest), these formations include Holocene stream channel deposits and basin deposits, Pleistocene Modesto Formation, Riverbank Formation, and the Pliocene Tuscan Formation. Project-specific hydrogeologic and geotechnical assessments for the site have noted the presence of surficial and near-surface bedrock, springs and the potential for perched groundwater, along with relatively low permeability soils (Appendix J). The site contains two abandoned agricultural water supply wells, one located near the center of the project site, and one located within a former ranch located near the southwest corner of the project site. These wells are not monitored so groundwater level data are not available.

Review of the DWR web map viewer indicates that the nearest two groundwater wells to the project site with groundwater level monitoring data available include State Well Number 22N02E30C002M (located near the corner of Humboldt Road and Notre Dame Boulevard in Chico, approximately 1,100 feet northwest of the project site boundary) and State Well Number 21N02E18C001M (located near the intersection of Oroville Chico Highway and Midway Road, approximately 1,800 feet southwest of the project site boundary) (DWR 2020c). Groundwater depths at these two well locations in fall of 2018 were 127.7 feet below ground surface, and 85.1 feet below ground surface, respectively (DWR 2020c). In general, groundwater depth (distance from ground surface) to the west of the project site decreases as it gets closer to the Sacramento River. The City of Chico's groundwater depth ranges from approximately 120 feet below ground surface to approximately 45 feet below ground surface (DWR 2020c). Groundwater in the area of Chico tends to generally flow in a west/southwest direction from Chico, towards the Sacramento River where it then flows south and generally follows the flow of the Sacramento River to the San Joaquin Delta (DWR 2020c).

Groundwater Quality

The Sacramento Valley Groundwater Basin supports the beneficial uses of municipal and domestic supply (MUN), agricultural supply (AGR), industrial services supply (IND), and industrial process supply (PRO) (CVRWQCB 2018). The Butte County Groundwater Management Plan was developed by the Butte County Water Commission. Groundwater in the Sacramento Valley portion of Butte County is typically of good quality (Butte County 2005). Groundwater quality is monitored yearly during the peak groundwater use during July/August. In 2003, a North Chico well was tested (approximately 8 miles from the project site), and was reported to have total dissolved solids (TDS) of 109 parts per million (ppm), electrical conductivity (EC) of 225 microsiemens, and a pH of 7.6 (Butte County 2005). Municipal water providers in the County provide their water quality data to the Butte County Department of Health Services and the California Department of Health Services. A compilation of more recent groundwater quality data will become available with publication of the forthcoming Groundwater Sustainability Plan.

As discussed in Section 4.8, Hazardous Materials, a Phase I ESA was conducted for the project site (see Appendix G). The Phase I ESA determined that no known underground storage tanks or other hazardous operations have been found or recorded on the project site and groundwater contamination from the project site or from hydrogeologically upgradient properties or activities is not a concern.

4.9.2 Regulatory Setting

Federal Regulations

Clean Water Act

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

- **CWA Sections 303 and 304** provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish TMDLs for each pollutant/stressor. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. The impairments applicable to the project's receiving waters are described in Section 4.9.1, Environmental Setting (Surface Water Resources).
- **CWA Section 401 (Water Quality Certification)** requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. As discussed in greater detail in Section 4.3, Biological Resources, the project site supports approximately 17.43 acres of aquatic resources, some of which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Act and/or Section 401 of the Clean Water Act.
- **CWA Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the SWRCB and the nine RWQCBs, who have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges. The City operates under the Phase II Small Municipal Separate Storm Sewer System (MS4) Program administered by the SWRCB, which requires implementation of new development and redevelopment standards to protect water quality, further described below under State Regulations.
- **CWA Section 404** establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. As discussed in Section 4.3 (Biological Resources), a total of 17.43 acres of aquatic resources have been mapped and delineated within the project site. Impacts on these resources are discussed under Impact 4.3-3 (Section 4.3, Biological Resources).

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and the Bureau of Land Management. At the state level, with the exception of tribal lands, the California Environmental Protection Agency and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that includes the following primary provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and (3) where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

The National Flood Insurance Act

The National Flood Insurance Act of 1968 established the National Flood Insurance Program to provide flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The National Flood Insurance Act also required the identification of all floodplain areas within the United States and the establishment of flood-risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing the Flood Insurance Rate Maps that delineate the areas of known special flood hazards and their risk applicable to the community. The program encourages the adoption and enforcement by local communities of floodplain management ordinances that reduce flood risks. In support of the program, FEMA identifies flood hazard areas throughout the United States on FEMA flood hazard boundary maps.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (codified in the California Water Code Section 13000 et seq.) is the primary water quality control law for California. This statute established enforcement and implementation measures for the SWRCB and the nine RWQCBs, which are charged with implementing this law. Porter-Cologne establishes a comprehensive program for the protection of water quality and the beneficial uses of water. It applies to surface waters, wetlands, and groundwater, and to both point- and nonpoint-sources. Porter-Cologne also incorporates many provisions of the CWA, such as delegating the NPDES permitting program to the SWRCB and the RWQCBs. Whereas the CWA applies to all waters of the United States, the Porter-Cologne Act applies to waters of the state[9], which includes isolated wetlands and groundwater in addition to federal waters. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state could cause pollution or nuisance, including impacts to public health and the environment.

The act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260(a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the state, file a Report of Waste

[9] "Waters of the state" are defined in the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050[e]).

Discharge with the applicable RWQCB. For discharges directly to surface water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as groundwater and isolated wetlands), Waste Discharge Requirements (WDRs) are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as required by NPDES-derived permits.

Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin

The Central Valley RWQCB is responsible for protection of the beneficial uses of waters draining to the Sacramento-San Joaquin Delta. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code Sections 13240–13247) (Central Valley RWQCB 2018). The most water quality–sensitive beneficial uses applicable to the Sacramento-San Joaquin Delta include water contact recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and migration and spawning. The designated beneficial uses for Butte Creek that may be impacted by water quality impairments include: Municipal and domestic supply (MUN), irrigation and stock watering (AGR), power (POW), water contact recreation (REC-1), freshwater habitat warm (WARM) and cold (COLD), cold water migration of aquatic organisms (MIGR), warm and cold water spawning (SPWN), and wildlife habitat (WILD) (Central Valley RWQCB 2018).

Water quality objectives of the Central Valley RWQCB are considered necessary to protect those present and probably beneficial uses listed above, and to protect existing high-quality waters within the state (Central Valley RWQCB 2018).

Construction General Permit (SWRCB Order No. 2009-0009-DWQ, as Amended)

For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires development and implementation of a stormwater pollution prevention plan (SWPPP), which would specify water quality BMPs designed to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB.

To receive coverage under the Construction General Permit, the project proponent must submit a Notice of Intent and permit registration documents to the SWRCB. Permit registration documents include completing a construction site risk assessment to determine appropriate coverage level; detailed site maps showing disturbance area, drainage area, and BMP types/locations; the SWPPP; and, where applicable, post-construction water balance calculations and active treatment systems design documentation.

Phase II Small Municipal Separate Storm Sewer System (MS4) Program (SWRCB Order 2013-0001-DWQ, as amended)

For stormwater discharges from Small MS4s, the SWRCB has adopted Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit) (Water Quality Order 2013-0001-DWQ, as amended). The Small MS4 Permit consists of the following program elements: Program Management, Public Involvement/Participation, Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control, Pollution Prevention/Good Housekeeping for Permittee Operations, Post Construction Storm Water Management for New Development and Re-development, Water Quality Monitoring Requirements, Program Effectiveness Assessment, and Annual Reporting. Besides requiring implementation of construction site BMPs, and performance criteria and design guidelines for development within the small MS4s service area, the Small MS4 Permit also requires operators to map their outfalls, properly maintain the storm drain system, educate the public on pollution prevention, and monitor and report on the quality of MS4 discharges to receiving waters, so that the effectiveness of the program can be evaluated. Collectively, the program elements are designed to ensure discharges from the storm drain system do not contain pollutant loads at levels that violate water quality standards and Basin Plan objectives and policies (such as a TMDL for a CWA Section 303(d) impaired water body). Implementation of the program elements is the responsibility of the small MS4 operator, which is usually either a city, county, community services district, or special district.

Of particular relevance to the proposed project is that the Small MS4 Permit requires regulated projects[10] to implement post-construction measures in the form of site design, source control, stormwater treatment measures, and baseline hydromodification management measures to reduce the discharge of pollutants in storm water to the Maximum Extent Practicable.[11] These include:

- Source Control Measures: Source control measures seek to avoid introduction of water quality pollution/degradation altogether. Source control strategies include strategies such as covering refuse/trash areas, properly managing outdoor storage of equipment/materials, minimizing use of pesticides and fertilizers in landscaping, using sumps or special area drains to send non-stormwater discharges to the sewer, ensuring regular grounds maintenance, etc.
- Site Design Measures: Site design measures require early assessment and evaluation of how site conditions, such as soils, vegetation, and flow paths, will influence the placement of buildings and paved surfaces. The evaluation is used to meet the goals of capturing and treating runoff and maximizing opportunities to mimic natural hydrology. Options for site design measures include preserving trees, buffering natural water features, disconnecting impervious surfaces, and using green roofs or porous pavement.
- Treatment Control Measures: Treatment control measures retain, treat and/or infiltrate the site runoff produced under normal circumstances, controlling both the quality and quantity of stormwater released to the stormwater conveyance system and natural receiving waters. In most situations, this means implementing structural BMPs (e.g., infiltration, bioretention, and/or rainfall harvest and re-use) to address

[10] Regulated Projects are defined in Section E.12.c of Water Quality Order 2013-0001-DWQ, and include all projects that create and/or replace 5,000 square feet or more of impervious surface, not including: detached single-family home projects that are not part of a larger plan of development; interior remodels; routine maintenance or repair within the existing footprint; or linear underground/overhead projects.

[11] The Maximum Extent Practical standard involves applying BMPs that are effective in reducing the discharge of pollutants in stormwater runoff. The Maximum Extent Practical requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive.

the volume and rate of runoff produced by an 85th percentile storm[12] (i.e., design capture volume). The Small MS4 Permit requires regulated projects to prioritize stormwater capture (e.g., infiltration and/or harvest and re-use) unless site conditions (e.g., low-permeability soils) make it infeasible

- **Hydromodification Measures**: Hydromodification measures are required for projects that create or replace one or more acres of impervious surfacing, so that post-project runoff shall not exceed the estimated pre-project flow rate for the 2-year, 24-hour storm. If the project creates or replaces less than 1 acre of impervious surfaces and demonstrates that post-project flows from the site are less than pre-project flows, then no hydromodification measures from Section E.12.e.(ii)(f) of the Phase II Small MS4 General Permit are required.
- **Operation and Maintenance Requirements**: The Small MS4 Permit requires that maintenance agreements stay in place with each property (executed and then recorded with the County Clerk) to ensure permanent treatment control measures developed on site are properly maintained and/or repaired in accordance with the stormwater quality control plan.

The aforementioned site design, treatment control, and hydromodification measures are often collectively referred to as "Low Impact Development" standards (or LID design). The City of Chico requires development to integrate LID measures into design and construction plans as a condition of permit approvals. The City of Chico's Post-Construction Standards Plan (2017a) provides developers and municipal plan checkers with detailed information on how to meet the Phase II MS4 Permit requirements.

Sustainable Groundwater Management Act

The SGMA is a package of three bills (Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management within 20 years of adoption of a Groundwater Sustainability Plan. Central to the SGMA are the identification of critically over-drafted basins and the prioritization of groundwater basins, establishment of groundwater sustainability agencies, and preparation and implementation of Groundwater Sustainability Plans for medium-priority, high-priority and critically over drafted basins. Groundwater sustainability agencies must be formed by June 30, 2017. Groundwater Sustainability Plans must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single Groundwater Sustainability Plan or multiple coordinated Groundwater Sustainability Plans.

At the state level, DWR has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner. As discussed in Section 4.9.1, the proposed project is within a high-priority groundwater basin and thus would be managed under a Groundwater Sustainability Plan (currently in preparation), by January 31, 2022.

[12] The 85th percentile storm represents a value of rainfall, in inches, such that 85% of the observed 24-hour rainfall totals within the historical record will be less than that value.

Local Regulations

City of Chico Municipal Code

The VESP development standards for Residential, Commercial, and Special Purpose land use designations, supersede duplicative development standards provided in Title 19 of the Chico Municipal Code (CMC). However, where the VESP standards are silent, the provisions of the CMC shall apply. The VESP includes site-specific foothill development standards, including foothill development standards designed to address the unique aspects of the project site. The sections of the CMC applicable to the project are described below followed by the applicable VESP development standards.

Stormwater Management and Discharge Controls

The Phase II MS4 Permit requires the City of Chico to condition larger projects, which create more than 5,000 square feet of impervious surface also identified as a Regulated Project, with implementing Source Control Measures and appropriate Best Management Practices to minimize the impacts of pollutant-generating activities, identify Drainage Management Areas and design an approach to mitigating storm water runoff for each area, include LID standards, and also implement one or more Site Design Measures that treat storm water runoff using methods to evapotranspire, infiltrate, harvest and reuse, or biotreat (Ord. 2468). Projects are required to quantify the runoff reduction achieved through the implementation of those measures. Chapter 15.50 (Storm Water Management and Discharge Controls) of the City's Municipal Code requires implementation of both construction and post-construction stormwater quality, pursuant to and consistent with, the CWA, the Porter-Cologne Water Quality Control Act and the City's MS4 permit, as such permit is amended and/or renewed. Specifically, Chapter 15.50 prescribes regulations that prohibit non-stormwater discharges to the City's storm drain system, reduce pollutants in stormwater discharges, and minimize degradation of water quality from construction-related activities. The provisions also require applicants for development projects disturbing over one acre to file a SWPPP with the State to gain coverage of the activity under the Construction General Permit. In addition, development that would create or replace 5,000 square feet or more of impervious surface are considered "regulated projects" subject to post-construction stormwater management requirements, including source control measures and LID design standards. Consistent with the Small MS4 General Permit, regulated projects that create and/or replace one acre or more of impervious surface are also required to develop and implement hydromodification management procedures to limit post-project runoff to pre-project flow rates for the 2-year, 24-hour storm event. Project compliance with these stormwater regulations is assessed by City staff prior to issuance of building permits.

Review of compliance with the stormwater management and discharge controls, including consistency with the City's Post-Construction Standards Plan, is included as part of the City's plan-check process (City of Chico 2017a). In general, proponents of discretionary projects must submit to the plan checker information about the project, which may include: the project's applicability status to the Post-Construction Standards Plan, site design plans and specifications, a completed Post-Construction Project Worksheet form, and an O&M Plan and signed Certificate of Responsibility. The plan checker will review the post-construction submittal package for completeness and will direct it to the engineering reviewers. Once comments are received from the engineering reviewers, the project proponent will be notified by the plan checker of any required modifications or of the approval of the proposed post-construction design measures. Regulated projects are entered into a database or spreadsheet to be tracked by the municipality for annual verification that the storm water treatment measures and hydromodification measures are being maintained in an effective condition. Chapter 15.50.075 requires that projects that disturb less than one acre but are part of a larger plan of development

must submit an erosion and sediment control plan that contains appropriate site specific BMPs that meet the minimum requirements to control storm water pollution due to construction activities. A SWPPP developed pursuant to the construction general permit may substitute for an erosion and sediment control plan for projects where a SWPPP is developed.

Foothill Development Overlay Zone

Construction within the project site would normally be subject to Chapter 19.52.100 (Foothill Development Overlay Zone) of the City's Municipal Code. The VESP instead proposes to use its own Foothill Development Standards, discussed below. The following grading and drainage standards from the City's Foothill Development overlay zone are provided in this EIR for contrast. Specific requirements include:

> **19.52.100.F Development Standards for Projects Within the -FD Overlay Zone.** The following development standards apply to all projects within the -FD Overlay Zone.
>
> 10. Grading and Drainage
>
> a. Grading shall be designed to conserve natural topographic features and appearances by retaining major natural topographic features (for example, canyons, knolls, ridgelines, and prominent landmarks), by minimizing the amount of cut and fill, and by means of landform grading to blend graded slopes and benches with the natural topography.
> b. Grading plans shall identify slopes that are to be landform graded. "Landform grading" shall mean a contour grading method that creates artificial slopes with curves and varying slope ratios in the horizontal plane designed to simulate the appearance of surrounding natural terrain.
> c. All graded areas shall be protected from wind and water erosion, in compliance Titles 16 (Buildings and Construction) and 16R (Building Standards). Interim erosion control plans, certified by the project engineer, shall be required.
> d. Exposed slopes shall be replanted with non-invasive but self-sufficient trees, shrubs, and groundcover that are compatible with existing surrounding vegetation, to help blend manufactured and natural slopes and to protect slopes from soil erosion.
> e. Grading that would create a slope exceeding a ratio of 3:1 requires a report and a stabilization study that indicates a greater permissible slope, unless it is determined by the Director that site conditions (as supported by data) do not warrant the report and study.

Creekside Development

Chapter 19.60.030 of the City's Municipal Code requires buffers to be maintained between certain creek corridors and adjacent development. The code applies to Comanche Creek and its tributaries, which is located within the VESP area. Projects located near a regulated creek must submit site-specific streambed information prepared by a qualified professional to determine that delineates the precise top of bank of the waterway and includes mitigation measures, such as rip rap, energy dissipation structures, or flow stabilizing devices, to keep flow velocities close to pre-development levels. A minimum setback of 25 feet from the top of bank is required, and the City may require additional setback if necessary to protect environmental resources.

Design Criteria and Improvement Standards

Chapter 18R of the City's Municipal Code provides design criteria to ensure that subdivision and non-subdivision public right-of-way and private street improvements are constructed in a manner that meets or exceeds uniform levels of sound engineering practice. Chapter 18R.08.050 of the standards require subdivisions to be provided with storm drainage facilities that will convey stormwater runoff, whether originating within the subdivision or in adjacent areas, to an existing drainage channel or drainage system. Adequate access for maintenance of the system must be provided. The capacity of an existing drainage system must be large enough to accommodate the additional runoff generated by the subdivision. Drainage patterns existing prior to construction of the shall be maintained, and full consideration must be given to the rights of adjacent property owners with regard to surface water drainage. A qualified engineer must prepare an analysis and design of the proposed storm drainage system. When stage construction is proposed, the analysis must provide for the design of the entire storm drainage system. The analysis must consider all existing and future contributory drainage area, regardless of whether or not said area is in the subdivision.

City of Chico 2030 General Plan

The City's 2030 General Plan, Parks, Public Facilities and Services Element, Open Space and Environment Element, and Safety Element includes the following goals and policies applicable to the proposed project (City of Chico 2017b).

Parks, Public Facilities and Services Element

Goal PPFS-6: Provide a comprehensive and functional storm water management system that protects people, property, water quality, and natural aquifers.

Policy PPFS-6.2 (Storm Water Drainage) – Continue to implement a storm water drainage system that results in no net increase in runoff.

Action PPFS-6.2.1 (Storm Water Drainage Standards) – Regularly update storm water drainage standards to include all current best management practices and ensure water quality and quantity standards governing the discharge of storm water drainage to downstream receiving waters conform with State and Federal regulations.

Policy PPFS-6.3 (Storm Water Drainage BMPs) – To protect and improve water quality, require the use of Best Management Practices for storm water drainage infrastructure suited to the location and development circumstances.

Action PPFS-6.3.1 (Alternative Storm Water Infrastructure) – Continue to develop engineering standards and guidelines for the use of alternative storm water infrastructure in order to minimize impervious area, runoff and pollution, and to maximize natural storm water infiltration wherever feasible.

Policy PPFS-6.4 (Water Runoff) – Protect the quality and quantity of water runoff that enters surface waters and recharges the aquifer.

Action PPFS-6.4.1 (Storm Water Management Program) – Continue to implement the City's Storm Water Management Program (SWMP) and enforce storm water provisions in the City's Municipal Code.

Policy PPFS-6.5 (Flood Control) – Manage the operation of the City's flood control and storm drainage facilities and consult with local and state agencies that have facilities providing flood protection for the City.

Action PPFS-6.5.2 (Natural Watercourses) – Utilize natural watercourses and existing developed flood control channels as the City's primary flood control channels when and where feasible.

Action PPFS-6.5.3 (Flood Impacts) - Require that new development not increase flood impacts on adjacent properties in either the upstream or downstream direction.

Action PPFS-6.5.4 (Flood Zones) – Require new development to fully comply with State and Federal regulations regarding development in flood zones.

Open Space and Environment Element

Goal OS-2: Connect the community with a network of protected and maintained open space and Creekside greenways.

Policy OS-2.5 (Creeks and Riparian Corridors) – Preserve and enhance Chico's creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.

Action OS-2.5.1 (Setbacks from Creeks) – Consistent with the City's Municipal Code, require a minimum 25-foot setback from the top of creek banks to development and associated above ground infrastructure as a part of project review, and seek to acquire an additional 75 feet. In addition, require a larger setback where necessary to mitigate environmental impacts.

Goal OS-3: Conserve water resources and improve water quality.

Policy OS-3.1 (Surface Water Resources) – Protect and improve the quality of surface water.

Action OS-3.1.1 (Comply with State Standards) – Comply with the California Regional Water Quality Control Board's regulations and standards to maintain, protect, and improve water quality and quantity.

Action OS-3.1.2 (Runoff from New Development) – Require the use of pollution management practices and National Pollutant Discharge Elimination System permits to control, treat, and prevent discharge of polluted runoff from development.

Policy OS-3.2 (Protect Groundwater) – Protect groundwater and aquifer recharge areas to maintain groundwater supply and quality.

Action OS-3.2.1 (Protect Recharge Areas) – Avoid impacts to groundwater recharge areas through open space preservation, runoff management, stream setbacks, and clustering of development.

Policy OS-3.3 (Water Conservation and Reclamation) – Encourage water conservation and the reuse of water.

Action OS-3.3.2 (Reduce the use of Turf) – Limit the use of turf on landscape medians, parkways, and other common areas in favor of native and drought tolerant ground cover, mulch and other landscaping design elements, and support this conversion of existing turf to less water-intensive ground cover types.

Action OS-3.3.3 (Parkway Irrigation) – Design and monitor irrigation systems in medians and parkways to maximize efficiency and minimize nuisance run-off.

Action OS-3.3.4 (Reclaimed Water) – Determine the feasibility and costs and benefits of reusing the City's treated wastewater for irrigation.

Action OS-3.3.5 (Water Efficient Landscape Irrigation) – Enforce the requirements of state water conservation legislation when reviewing landscaping plans for new projects.

Safety Element

Goal S-2: Minimize the threat to life and property from flooding and inundation.

Policy S-2.1 (Potential Flood Hazards) – When considering areas for development, analyze and consider potential impacts of flooding.

Action S-2.1.1 (Flood Hazard Analysis) – As part of project review, analyze potential impacts from flooding and require compliance with appropriate building standards and codes for structures subject to 200-year flood hazards.

Action S-2.1.2 (Flood Hazard Management) – Continue efforts to work with the Federal Emergency Management Agency and state and local agencies to evaluate the potential for flooding, identify areas susceptible to flooding, accredit the flood control levees in the City, and require appropriate measures to mitigate flood related hazards.

Valley's Edge Specific Plan

The VESP includes the following guiding principles, goals and actions related to hydrology and water quality. The VESP includes policies and actions that would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Principles, Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-4: Preserve Natural & Environmental Resources and Restore Sensitive Habitat: Utilize "avoidance by design" strategies and open space to preserve sensitive habitat, safeguard natural drainages, increase biodiversity, provide for wildlife movement, and protect wetlands and riparian corridors previously degraded by a century of grazing.

Action PROS-4.3 – Support the restoration of riparian areas and seasonal streambeds to improve native biodiversity and enhance potential for groundwater recharge.

Section 2.3.2 Chapter 4: Land Use

Goal LU-2: Balance Growth and Conservation: Balance growth and conservation by reinforcing the City's compact urban form, by establishing urban growth limits, by managing where and how growth and conservation will occur, in addition to responding to Chico's housing demand, rental units, and commercial space in a responsible and comprehensively planned manner.

Action LU-2.4 – Promote Groundwater recharge by preserving on-site seasonal creeks that could potentially recharge shallow aquifers west of the planning area.

Goal LU-3: Create Distinctive Form and Character: Create a distinctive character for the plan area by allowing natural landscapes features to define urban edges, by using trees, landscaping, fencing and architectural guidelines to unify the community, by enabling way-finding features, entry features, and gateways to promote sense of place and arrival to Chico and to the VESP planning area.

Action LU-3.1 – Create a master land use plan which enables open space to be the predominant land use, preserving notable natural land forms and features and enabling park like settings of the natural environment to define and surround the limits of development.

Section 2.3.4 Chapter 6: Infrastructure and Public Facilities

Goal INFR-1: Promote Groundwater Recharge through Design: Promote groundwater recharge by preserving areas with existing recharge potential, and enhance the potential for sub-surface transmission in areas impacted by development.

Action INFR-1.1 – Preserve all seasonal creeks that could potentially recharge shallow aquifers west of the plan area.

Action INFR-1.2 – Where appropriate utilize bio-swales and other surface conveyance systems such as underground utility trenches having the potential for greater sub-surface transmission than existing highly cemented and relatively impermeable surface lahar rock.

Action INFR-1.3 – Design stormwater conveyances to direct post treated run-off into natural creeks where sub-surface transmission is more likely to occur.

Goal INFR-2: Minimize Hydrological Impacts: Minimize hydrologic impacts on wetland resources and downstream infrastructure using LID, source control and treatment control facilities.

Action INFR-2.1 – Ensure no adverse impacts are created downstream of the plan area by designing and constructing on-site detention and retention areas throughout the development area, and by requiring, in accordance with City and State law, that such design attenuates post-project peak flow rates for storms up to the 100-year, 24-hour event.

Action INFR-2.2 – Avoid impacting wetland resources by locating detention and retention basins outside of jurisdictional features, and by treating run-off prior to discharge into natural drainage courses.

Goal INFR-3: Maintain Flexibility in Stormwater Solutions: Implement and encourage advancing technologies that are compliant with the State Water Resources Control Board (SWRC) and approved by the City

Action INFR-3.1 – As applicable, utilize advancing mechanical treatments, such as Oil/Water Grit Separators (OWS) and Continuous Deflective Separation (CDS), to remove free and dispersed non-emulsified oil and settled solids from waste streams or the underground vaults that CDS units store for periodic maintenance removal.

Action INFR-3.2 – Maintain the latitude to employ a wide variety of techniques capable of achieving desired water quality outcomes, such as soil amendments, bioretention cells, rain gardens, disconnected roof drains, tree planting, preservation of natural vegetation and drainage courses, as may be more or less applicable based on soil characteristics of the site.

Section 2.3.6 Appendix A: Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

Action DES-2.11 – Ground Water and Surface Runoff: Minimize building-site storm water runoff and increase rainwater retention on-site through proper grading (terracing), soil retention and creation, swales and micro-retentions.

Chapter 4: Land Use Section

The Valley's Edge Foothill Development Standard are applicable throughout the entire VESP area and differ from the City's Foothill Overlay Zone, to accommodate topography, oak trees, rock walls, etc. The applicable standards are provided below.

Section 4.4.4 Foothill Development Standards

The following Foothill Development Standards shall apply to the project-specific sites that exceed a 10 percent slope. *Street Design*

1. Streets shall follow the natural contours of the terrain, where feasible and practical, to minimize the need for grading.

Grading and Drainage

1. No structures requiring a building permit shall be permitted within six feet of areas exceeding 15 percent slope without proper embankment and erosion controls. Grading shall be designed to conserve natural topographic features and appearances by retaining major natural topographic features (for example, canyons, knolls, ridgelines, and prominent landmarks), by minimizing the amount of cut and fill, and by means of landform grading to blend graded slopes and benches with the natural topography.
3. All graded areas shall be protected from wind and water erosion, in compliance with Titles 16 (Buildings and Construction) and 16R (Building Standards). Interim erosion control plans, certified by the project engineer, shall be required.
4. Exposed slopes shall be replanted with non-invasive species, self-sufficient trees, shrubs, and groundcover that are compatible with the Landscape Architectural Design Guidelines (Appendix A) to blend manufactured and natural slopes and to protect slopes from soil erosion.

Required Plans and Reports

A subdivision or land use entitlement application for a site requiring disturbance of natural grade in excess of a 10 percent slope, is required to shall include the following documents, unless the City determines otherwise.

- Topographic Map
- Project Plans
- Soils Report
- Geology Report
- Oak Tree Plan

4.9.3 Impacts and Mitigation Measures

Methods of Analysis

Impacts with respect to hydrology and water quality are assessed by comparing conditions expected under the proposed project to the existing environmental setting described above. Hydrology and water quality impacts are assessed using the drainage report (and associated addendum memos) prepared for the proposed project by the applicant's engineer, included as Appendices H-1, H-2, H-3, H-4, and H-5. as well as a review of the land use plan and development siting and design strategies contained in the VESP. The assessment of groundwater issues relies primarily on the Water Supply Assessment included as Appendix J. The analysis considers impacts on hydrology, water quality, flooding, and groundwater resources in the context of broader issues and concerns affecting the region. The study area for surface water hydrology is the 3,900-acre project-specific watershed and sub-sheds identified in Table 4.9-2, and the study area for groundwater resources is the Vina Subbasin of the Sacramento Valley Groundwater Basin. Actions required to implement the City's General Plan policies related to hydrology and water quality, as enforced through the City of Chico Municipal Code and the development approval process, are considered as components of the project in the evaluation of impacts.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
  - (i) (result in substantial erosion or siltation on- or off-site;
  - (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
  - (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - (iv) Impede or redirect flood flows.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Threshold Criteria not Applicable to the Proposed Project

Flood Hazard, Tsunami, or Seiche Zones

There are no proposed project elements that would be located in a flood hazard zone that could risk release of pollutants during the inundation. The limits of the 2-, 10-, and 100-year flow events were determined in Appendix H-1. Although flood zones occur on either side of Comanche Creek and each of the unnamed intermittent drainages on-site, as described in Section 4.9.1, these areas are zoned for parks and/or open space and therefore, there would be no pollutant sources present that would be subject to inundation. In addition, the project site is not located within an area that has the potential to be inundated by a tsunami, seiche, or other flood threat such as dam or levee inundation zones. Therefore, there would be no impact and these issues are not further discussed.

Project Impacts

4.9-1 The proposed project could violate water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality.

Water quality can be affected in the short-term by construction activity (e.g., erosion and sedimentation due to land disturbances, uncontained material and equipment storage areas, improper handling of hazardous materials) and in the long-term due to release of urban pollutants (e.g., landscaping fertilizers, pesticides and herbicides; leaking oils and grease from vehicles; and trash). Water quality impacts associated with the proposed project can come from both stormwater runoff and discrete non-stormwater discharges to receiving waters. Without proper consideration and precautions, and without conducting construction and development activities according to the terms and conditions of applicable permits, such activities can degrade water quality in receiving water bodies, leading to violation of water quality standards and/or Basin Plan objectives.

As discussed in the Environmental Setting, water quality conditions in the proposed project's receiving waters—consisting of Comanche Creek, Butte Creek, and the Sacramento River—are generally good. The most widespread issues of concern with respect to water quality consists of residual mercury concentrations from historical mining activities throughout the Sierra Nevada foothills and elevated concentrations of agricultural pesticides that are no longer authorized for use (e.g., DDT, PCBs, chlordane, deildrin, chlorpyrifos), both of which have led to the listing of downstream waters on the CWA Section 303(d) list of water quality impairments (SWRCB 2017). Because the proposed project does not propose mining activities or agriculture, direct contributions of such contaminants would not occur.

Construction Effects on Surface Water Quality

Construction activities associated with the VESP would occur in stages, generally from west to east, generally beginning with the backbone infrastructure (e.g., roads, underground utilities, etc.) necessary to serve each stage of development. The most intensive soil disturbance would occur during site preparation and earthmoving activities associated with installation of underground utilities, foundation and building pad construction, and road and streetscape construction. During this period, soil erosion may result in discharges of sediment-laden stormwater runoff into nearby receiving waters. These impacts would be temporary in any one location as construction occurs in discrete zones throughout the proposed project area.

Other pollutants of concern associated with construction consist of debris/trash, heavy metals, and potentially organic pollutants (e.g., fuels, oils and solvents). Although the downstream waters are not listed under CWA Section 303(d) as impaired with sediment, trash, and/or organic pollutants, release of construction-related pollutants could temporarily impair the beneficial uses of downstream receiving waters and/or violate Basin Plan water quality objectives for sediment/turbidity and other constituents.

The potential for chemical releases is present at most construction sites due to the use of paints, solvents, fuels, lubricants, and other hazardous materials associated with heavy construction equipment. Once released, these hazardous materials could be transported to nearby surface waters in stormwater runoff, wash water, and dust control water. Small quantities of hazardous materials would be required to be stored in compliance with applicable regulations to prevent or contain any spills. Section 4.8, Hazards and Hazardous Materials, provides further discussion regarding hazardous materials use and storage, and the potential for accidental release of hazardous materials during construction and operation of the proposed project.

The majority of projects (development) within the VESP area would be located within the Foothill Development overlay zone and would be required to use grading methods that would minimize the occurrence of erosion and sedimentation during construction grading on sloped areas. The VESP includes specific development standards developed to address the unique aspects of the project site which include minimization of mass grading in areas of the site that contain slopes and attention to reducing erosion and sedimentation. Furthermore, as part of the permitting and approval of individual uses proposed by the project, future projects involving the disturbance of one acre or more would be required to develop and implement a SWPPP in accordance with the Construction General Permit (as described in Section 4.9.2). Projects disturbing less than one acre would be required to develop an erosion and sediment control plan in accordance with the Chapter 15.50.075 of the City's Municipal Code. The erosion and sediment control plan must contain erosion and sediment controls, soil stabilization, dewatering, source controls, and pollution prevention measures per the California Stormwater Quality Association Best Management Practices Handbooks and must describe the rationale used to select BMPs. The SWPPP must specify the location, type, and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into nearby receiving waters (in this case, the northern Sacramento–San Joaquin Delta). BMPs must be implemented to address the potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations); release of sediment from material stockpiles and other construction-related excavations (e.g., sediment barriers, soil binders); and other construction-related activities with the potential to adversely affect water quality. The number, type, location, and maintenance requirements of BMPs to be implemented as part of the SWPPP depend on site-specific risk factors such as soil erosivity factors, construction season/duration, and receiving water sensitivity.

SWPPPs must be developed and implemented by a Construction General Permit Qualified SWPPP Developer/Qualified SWPPP Practitioner. The Qualified SWPPP Developer/Qualified SWPPP Practitioner is tasked with determining the receiving water risks (including beneficial uses and CWA Section 303d impairments), monitoring site activities that could pose risks to water quality, and developing a comprehensive strategy to control construction-related pollutant loads in site runoff. Minimum standard BMPs include erosion and sediment controls; site management/housekeeping/waste management; management of non-stormwater discharges; run-on and runoff controls; and BMP inspection, maintenance, and repair activities (especially post-storm). A rain event action plan must also be prepared by the Qualified SWPPP Developer/Qualified SWPPP Practitioner to outline the procedures to prepare the construction site for rain events and minimize the potential release of construction-related contaminants.

The following list includes examples of treatment control BMPs that could be required under a SWPPP or erosion and sediment control plan during construction. The exact BMPs implemented would vary based on the nature of construction activities, the characteristics of the site, and the existing impairments applicable to receiving waters (these features would appear as notes on final design plans):

- Silt fences installed along limits of work and/or the construction site
- Stockpile containment (e.g., visqueen plastic, fiber rolls, gravel bags)
- Exposed soil stabilization structures (e.g., fiber matrix on slopes and construction access stabilization mechanisms)
- Street sweeping
- Tire washes for equipment
- Runoff control devices (e.g., drainage swales, gravel bag barriers/chevrons, velocity check dams) shall be used during construction phases conducted during the rainy season.
- Drainage system inlet protection
- Wind erosion (dust) controls
- Tracking controls
- Prevention of fluid leaks (inspections and drip pans) from vehicles
- Dewatering operations best practices
- Materials pollution management
- Proper waste management
- Regular inspections and maintenance of BMPs

Compliance with the requirements of the Construction General Permit, the VESP development standards, and Chapter 15.50 of the City's Municipal Code are sufficient to address the potential for buildout under the VESP to violate water quality standards or WDRs. Implementation of SWRCB and Central Valley RWQCB requirements (CWA NPDES Program and Porter–Cologne Water Quality Control Act WDRs) are enforced by the City of Chico through Section 15.050.060 of the Municipal Code, and consistent with the City's General Plan policies and actions, including Policies OS 3.1, OS 3.2, and OS 3.3 which refer to the protection of water quality as described in Section 4.9.2 Regulatory Setting above. Because existing regulatory requirements are sufficient to avoid water quality degradation, meet water quality standards and Basin Plan objectives, and prevent adverse effects on beneficial uses, the construction-related impact of the project on water quality would be **less than significant**.

Project Operation Effects on Surface Water Quality

Water quality degradation during project operation could occur if future projects within the VESP area are not designed to incorporate appropriate measures that address the potential urban pollutants that would be generated by the development of the VESP area (e.g., landscaping fertilizers, pesticides and herbicides; leaking oils and grease from vehicles; and trash).

Projects developed within the VESP would be reviewed by the Homeowners Association and the City for conformity with VESP action LU-3.1, and Goal PROS-4, and action PROS-4.3, which promote the preservation of natural features, including creeks, and which require "avoidance by design" strategies and the preservation of open space. Further these goals and actions require projects developed within the VESP to protect wetlands

and riparian corridors, and to support the restoration of riparian areas and seasonal streambeds. The overall development plan for the VESP designates approximately 672 acres of the total 1,448- acre area for parks, recreation, and open space. These areas would provide buffers between proposed areas of development in the VESP area and existing on-site creeks. Portions of the project site that drain directly to Little Chico Creek and Butte Creek would remain undeveloped (watersheds A and G in Table 4.9-2 and Figure 4.9-1). The buffer zones around riparian areas would provide areas where pollutants in stormwater can be filtered by vegetation, and immobilized and decomposed by bacteria in the soil, thereby reducing the pollutant load in runoff water entering on-site creeks.

Development within the VESP area would also be required to comply with the post-construction stormwater runoff management requirements of the Phase II MS4 Permit. As described in Section 4.9.2, Regulatory Setting, the Phase II MS4 Permit includes site design measures and BMPs that would reduce contaminants (e.g., landscaping fertilizers, pesticides and herbicides; leaking oils and grease from vehicles; and trash) from individual projects developed under the VESP. As described in Chapter 2, Project Description, design considerations for stormwater collection and conveyance would vary depending on the intensity of land use, slope, geology, proximity to natural drainage courses and other factors. Drainage in very-low density residential areas would rely predominantly on open swales and also LID for conveyance, treatment, and infiltration, while more densely developed areas would rely more on underground pipes. On-site detention features would employ BMPs and LID methods to slow water, filter out containments, and encourage infiltration and evapotranspiration. LID design concepts may include the implementation of techniques such as limiting the amount of hardscape, amended soil, rain garden (or bioretention cell to treat polluted runoff from a parking lot, for example), disconnected roof drain, tree planting, native vegetation preservation, and natural drainage flow. Solutions such as porous pavement and reduced hardscape aim to maximize infiltration and slow runoff, the application of which would, as with other techniques, be conditioned upon appropriate geological conditions.

Projects developed within the VESP would also be reviewed for conformity with VESP action INFR-2.2, which requires runoff from project sites to be treated prior to discharge into natural drainages, and action INFR-3.1, which requires that advanced mechanical treatments, such as oil/water grit separators and continuous deflective separation be used where possible. Oil/water grit separators remove free and dispersed non-emulsified oil and some settled solids from waste streams, and continuous deflective separation units trap pollutants in underground vaults for periodic maintenance and removal.

Compliance with the Phase II MS4 Permit post-construction stormwater management requirements and conformity with VESP goals, actions, and development standards would minimize the discharge of urban pollutants from future projects within the VESP area into receiving waters. Consequently, the potential for the development of the VESP to degrade water quality would be **less than significant**.

Groundwater Quality

Grading and construction would proceed according to the construction SWPPP, required under the statewide Construction General Permit. As described above, during construction it is possible that small quantities of hazardous materials could be spilled or leaked onto the ground surface. Small spills or leaks from construction equipment and building materials would not be expected to contaminate groundwater, as they would likely to break down or dilute in the shallow soil layer. Furthermore, the SWPPP would require the implementation of BMPs that would minimize the potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations). Therefore, the potential for construction activities to contribute to groundwater degradation would be **less than significant**.

Project operation would not include the use or transport of substantial quantities of hazardous materials with the potential to result in groundwater contamination. Further discussion of potential impacts associated with use or transport of hazardous materials is provided in Section 4.8, Hazards and Hazardous Materials. The proposed project would tie into the City's sewer system and would therefore result in no impacts to groundwater as a result of septic tank failure or high groundwater septic system interaction. The project's compliance with the Phase II MS4 permit would route stormwater runoff through surface and pipe conveyance to water quality treatment features (e.g., vegetated swales) before being discharged to areas treated with erosion protection measures. The water quality treatment features and erosion protection measures would slow the movement of water and filter sediment and other surface water contaminants from the runoff, which then surface flow to adjacent creeks. Therefore, the project would prevent the infiltration of contaminants into the groundwater by providing water quality treatment for all runoff before it enters the creeks, where the majority of groundwater infiltration on the project site occurs (GeoPlus 2010 and Appendix E). Consequently, the potential for groundwater quality degradation to occur during the operation of the proposed project would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.9-2 The proposed project could decrease groundwater supplies and interfere with groundwater recharge impeding sustainable groundwater management of the Vina Subbasin.

Groundwater Recharge

The proposed project would add approximately 794 acres of impervious surfaces to the 1,448-acre project site. The addition of impervious surfaces to approximately half of the project site could interfere with groundwater recharge on the project site. However, as described above, the 2010 a preliminary hydrogeologic assessment of the project site found that a relatively impermeable layer of well lithified lahar rock of the Tuscan formation unit C underlies the majority of the project site. Alluvial materials that underlie creeks on the site could potentially recharge shallow aquifers on and near the project site were limited to areas that have been excluded from proposed future development and are proposed to remain in their natural state. The 2010 preliminary assessment concluded the development restriction should mitigate on-site impacts to groundwater recharge in these areas.

The geotechnical investigation conducted in 2019 supported these conclusions (Appendix E), which are also consistent with a recent Butte County groundwater recharge study, which found that recharge in the foothills is primarily derived from percolation directly into outcrops of the Lower Tuscan Formation, that do not occur on the project site (Brown and Caldwell 2017).

Because the VESP would maintain open spaces between areas of proposed development and on-site creeks, which are the areas where alluvial materials are located, the development of the VESP area would not interfere substantially with groundwater recharge, and therefore would not impede sustainable groundwater management of the Vina Subbasin. This impact would be **less than significant**.

Groundwater Supplies

Construction

The geotechnical investigation did not encounter groundwater in any of the 16 to 20-foot deep borings conducted during the field exploration (Appendix E). As described in Section 4.9.1, Environmental Setting, groundwater depths at two well locations nearest the project site taken in fall of 2018 were 127.7 feet below ground surface, and 85.1 feet below ground surface. The geotechnical investigation report notes that trees located along certain slope breaks are indicative of seasonal groundwater flows, and also indicates that perched groundwater may occur on the project site.

Based on the findings of the geotechnical investigation and the depths to groundwater at the nearest wells located to the project site, it is unlikely that excavation activities during construction would encounter groundwater. If perched groundwater is encountered during the course of construction, groundwater dewatering in the area of excavation may be required. Any construction groundwater dewatering would be temporary and localized, and would occur within a local perched aquifer, and therefore would not substantially decrease groundwater supplies within the larger Vina Subbasin. Therefore, the potential of construction activities within the VESP to decrease groundwater supplies in a manner that would impede sustainable groundwater management of the Vina Subbasin would be **less than significant**.

Operation

The land uses within the VESP area would not pump groundwater. Water to serve the project would be provided by Cal Water. Cal Water would incorporate the VESP area into its Chico District service area. Cal Water supplies water to the Chico District service area by pumping groundwater from the Vina Subbasin.

As described in Section 4.9.1, Environmental Setting, the project site is located within the Vina Subbasin, which is designated by DWR as a "high priority" basin and under the SGMA. However, the Vina Subbasin is not adjudicated[13] (DWR 2020d) and was not considered in a state of critical overdraft[14] in the most recent evaluation of California groundwater basins completed by the California Department of Water Resources (DWR 2019). Agricultural use accounts for the majority of pump groundwater in the region. In Butte County, municipal and industrial usage accounts for 9 % of all groundwater usage (Butte County Department of Water and Resource Conservation 2016).

The proposed project would require approximately 1,748-acre feet per year (af/yr), which would represent an approximately 0.5% increase in water demand within Butte County (Appendix J). The Water Supply Assessment (WSA) completed for the proposed project (Appendix J) estimates that the total demand in Cal Water's Chico District service area, including demand from the proposed project, would be approximately 26,293 af/yr; therefore, the proposed project would represent an approximately 7% increase in water demand in Cal Water's Chico District service area. The additional groundwater pumping required to supply water to the proposed project would potentially decrease groundwater supplies within the Vina Subbasin.

[13] Adjudicated basins are basins within which there is a legal dispute over water rights, and the court determines who the water rights owners are, how much groundwater those rights owners can extract, and how the groundwater area will be managed.

[14] A basin is subject to critical overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts.

The Vina Groundwater Sustainability Plan is currently in the development process thus, it is not certain how undesirable results and sustainable yield would be defined for the Vina Subbasin. For the purposes of this analysis, it is assumed that the proposed project would result in a significant impact to groundwater resources if the groundwater pumping required to support the VESP would result in a substantial and unreasonable groundwater level decline in the long term. The project's WSA (Appendix J) estimated that the sustainable pumping range for the Chico District based on historical groundwater changes and pumping levels range from 23,287 af/yr (the approximate level that would result in no groundwater level change) to 33,462 af/yr (the approximate level that would decrease groundwater levels by approximately 1.0 feet per year). Anticipated water usage in the Chico District would be approximately 24,545 af/yr without the proposed project, and 26,293 af/yr with the proposed project. Therefore, both with and without the proposed project, groundwater usage in the Chico District would result in water level declines of less than 1.0 feet per year. These rates of decline are slow enough to not result in sudden or unexpected undesirable effects on groundwater beneficial uses and users. Furthermore, the rates of decline are consistent with historical fluctuations in groundwater levels within and near the Chico District which have ranged from -1.0 feet per year to +0.04 feet per year between 2005 and 2018. Because the Vina subbasin is not in a state of critical overdraft, continued annual groundwater declines of less than 1.0 feet per year would not be substantial or unreasonable. Therefore, the potential of the proposed project to substantially decrease groundwater supplies in a manner that would interfere with the sustainable management of the groundwater basin would be **less than significant**.

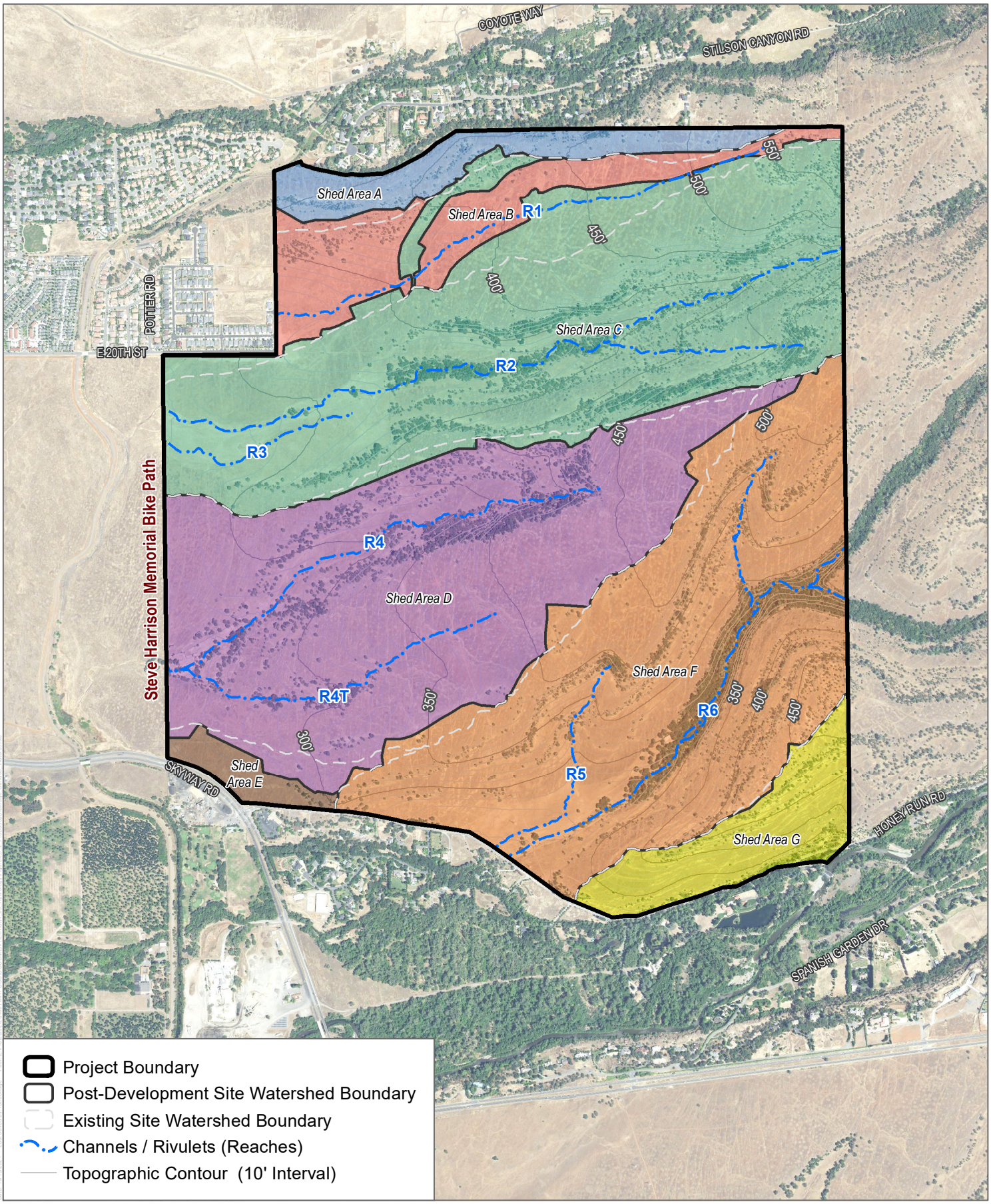
Mitigation Measures

No mitigation measures are required.

4.9-3 The proposed project could alter the existing drainage pattern, increasing surface water runoff in a manner that would increase flooding on- or off-site, contribute runoff water which could exceed the City's stormwater drainage system capacity, or result in substantial erosion or siltation on- or off-site.

The Draft Drainage Study prepared for the VESP (Appendix H-1) indicates that development of the project site would modify a total of 794 acres and add approximately 520 acres of impervious surfaces to the VESP area. Such an increase in impervious surfaces would result in increased runoff rates and volumes. As depicted in Figure 4.9-2 (in comparison to Figure 4.9-1), watershed areas would change slightly because of project development primarily due to diversion of surface flows from Shed Areas A and B to Shed Area C. In addition, a portion of the runoff from Shed Area E would be diverted to Shed Area D. The VESP includes Action INFR-2.1 which requires that no adverse impacts are created downstream of the project by designing and constructing on-site stormwater detention areas throughout the development area, and by requiring attenuation of post-project peak flow rates for storms up to the 100-year, 24-hour event. The VESP provides the preliminary design of the major storm drain features, culverts, and conveyances that are anticipated to be required to support development within the VESP area. This preliminary design, which includes a proposed storm drain to divert stormwater runoff from Shed Areas A and B to Shed Area C, is shown in Figure 2-10 of this EIR.

As described under Section 4,9.1, Environmental Setting, the Draft Drainage Study determined that under existing conditions, obstructed and/or undersized culverts could result in overtopping of downstream roadways adjacent to the project site during 2-year, 10-year, and 100-year storm events, except for Dawncrest Drive located in the Belvedere Subdivision. Dawncrest Drive overtops only during a 100-year storm event. Therefore, in the absence of flood control features, the potential increase in runoff rates due to the development of the VESP area would exacerbate flooding on- and off-site. However, flood control features, described and delineated in Appendices H-1, H-2, H-3, H-4, and H-5, would reduce runoff rates, thus preventing on- -site flooding and not exacerbating existing off-site flooding, preventing exceedances of City stormwater infrastructure, and preventing on- and off-site erosion.



SOURCE: USDA 2016, USGS NHD 2018, Frayji Design Group 2020

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0 750 1,500 Feet

FIGURE 4.9-2

Post-Development Site Watersheds and Drainages

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The Draft Drainage Study evaluated pre-project and post-project peak stormwater flows for drainage Sheds B, C, D, (a small portion of) E, and F. For purposes of the hydrologic analysis, the individual drainages within these watersheds were identified as drainage Reaches R1, R2, R4, R4T, R5, and R6 (see Figures 4.9-1 and 4.9-2). The results of the analysis are summarized in Table 4.9-5, for the 2-year, 10-year, and 100-year design storm. Following completion of the Draft Drainage Report, an addendum memorandum (Appendix H-2) was prepared to clarify drainage issues pertaining to Reach 1. A follow up addendum memorandum (Appendix H-3) and associated exhibit (Appendix H-4) and Drainage Report Addendum #1 (Appendix H-5) were prepared in association with an updated detention basin proposed for Reaches 5 and 6. The results of the hydrologic analysis are described below by drainage reach.

Table 4.9-5. Pre-Development and Post-Development Peak Flow Rates

Design Level Storm Event	2-Year, 10-Year, and 100 Year Storm (cfs)							
	Reach R1		*Reach R1+R2+R3*		*Reach R4+R4T*		*Reach R5+R6*	
	Pre-Project	*Post-Project*	*Pre-Project*	*Post-Project*	*Pre-Project*	*Post-Project*	*Pre-Project*	*Post-Project*
2-Year	89.4	89.0	593.3	586.6	276.6	269.2	1,440.2	1,415.4*
10-Year	153.1	135.5	1,027.5	930.5	392.2	388.1	2,360.5	2,356.2*
100-Year	306.1	241.7	2,048.2	1,624.2	822.3	652.3	4,941.2	4,892.0*

Sources: Appendices H-3, H-4, and H-5.
Notes: csf = cubic feet per second
* TBD based on proposed approximate 7.-5 acre-feet detention basin (minimum 3.5-acre, 4-foot deep)

Reach R1

Reach 1 drains off-site to the west, into and around the adjacent Belvedere Subdivision. As previously discussed, current improvements are sufficient to convey the 2-year and 10-year storm events. However, the undeveloped condition of the project site would result in overtopping of Dawncrest Drive, along the western project boundary, during a 100-year storm event. The City recently installed a drainage pipe that would be capable of conveying most of the stormwater runoff, but not the entire amount in a clogged pipe condition. However, the project drainage design includes diversion of 100-year stormwater flows south to Reach 2, via a proposed storm drain (see Figures 2-10 and 4.9-2). This diversion would reduce 100-year storm flows by 64.4 cfs (Table 4.9-5), thus reducing stormwater flows in Reach 1 such that overtopping of Dawncrest Drive would not occur.

Diversion of stormwater from Reach 1 to Reach 2 would not be completed until development occurs within Reach 1. In the interim, temporary measures would be implemented to divert and detain stormwater to prevent overtopping of Dawncrest Drive. A design level stormwater report, detailing the methods used to prevent overtopping of Dawncrest Drive for a 100-year storm event would be prepared upon submittal of the improvement plans that affect Reach 1. The stormwater report would demonstrate compliance with the City's Municipal Code Chapter 15.50, Storm Water Management and Discharge Controls as well as Chapter 18R.08.050, which requires subdivision projects to provide stormwater drainage facilities that are large enough to accommodate the additional runoff generated by new subdivision projects.

Reaches R1, R2, and R3

New roadway crossings would be designed to impound storm water runoff such that project-related stormwater runoff would be less than existing conditions for the 2-year, 10-year, and 100-year stormwater flow conditions.[15] Stormwater detention within this watershed would reduce 100-year storm flows by 424 cfs (Table 4.9-5), thus preventing overtopping of Potter Road or the Steve Harrison Memorial Bike Path (north crossing), at the western property boundary.

The proposed roadway impoundments would have multiple culverts, installed at different elevations, which would retain runoff from small rain events while having reserve capacity to convey higher volumes of runoff from larger, less frequent events. All culverts were modeled to be constructed of corrugated metal pipe material, with headwalls at the inlets. Culvert types, sizes, and configurations may be subject to change during the final design phase. All final designs are required to meet City of Chico and Butte County standard requirements, including compliance with Municipal Code Chapter 15.50, Storm Water Management and Discharge Controls.

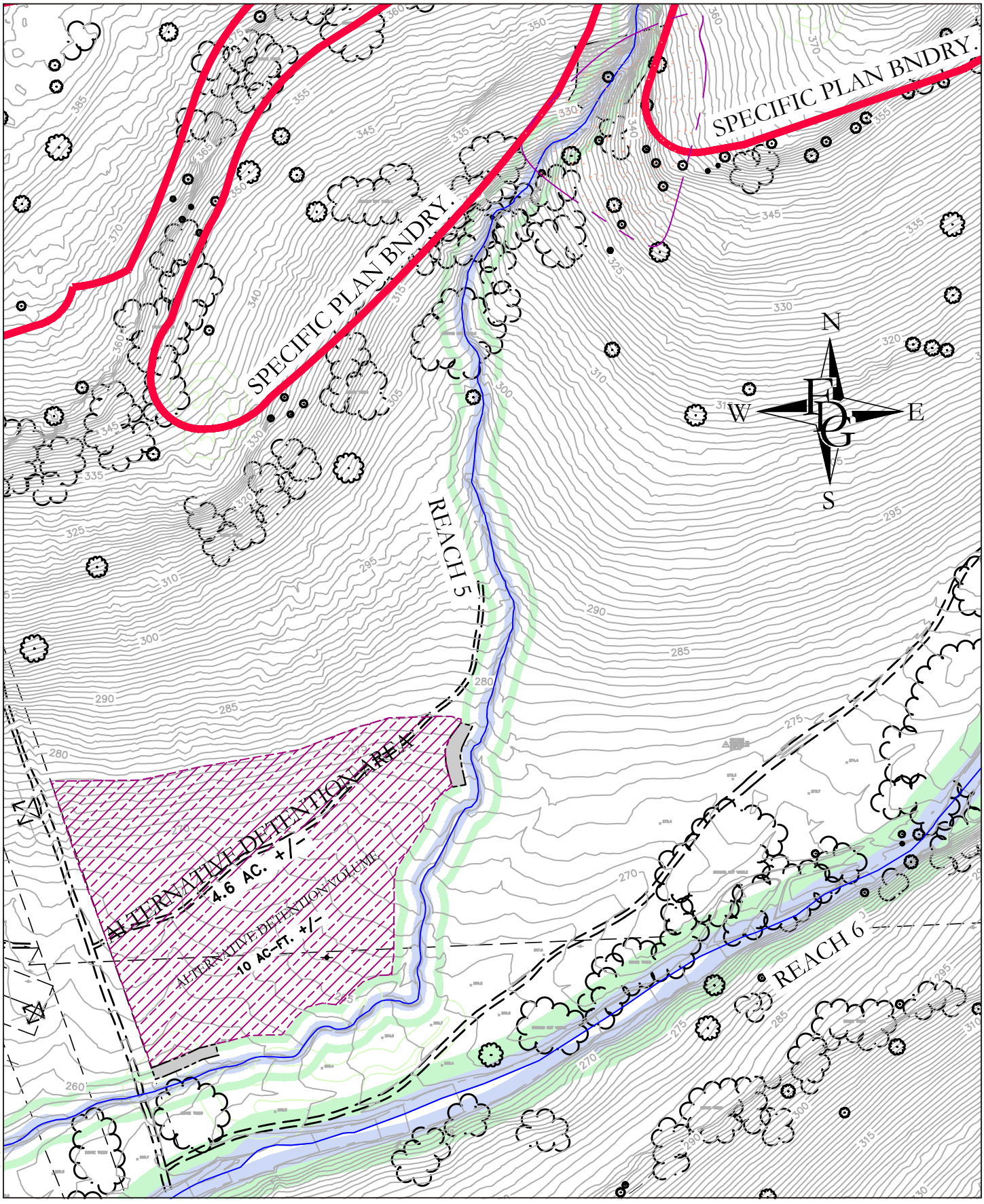
Reaches R4 and R4T

Similarly, new roadway crossings would be designed to impound storm water runoff such that project-related stormwater runoff would be less than existing conditions for the 2-year, 10-year, and 100-year stormwater flow conditions, within the watershed encompassing Reach R4 and R4T (Figure 4.9-2). Stormwater detention would reduce 100-year storm flows by 170 cfs (Table 4.9-5), such that overtopping of Potter Road (south crossing), at the western property boundary would not occur.

Reaches 5 and 6

The existing storm drain facilities at Honey Run Road (identified as Humbug Road in the Draft Drainage Report), located along the southern project boundary, would not be sufficient to convey the 2-year, 10-year, and 100-year storm events. As indicated in Appendix H-5, Drainage Report Addendum #1, development in the vicinity of Reach R6 was removed following completion of the original drainage report (Appendix H-1) to eliminate increased post-construction runoff to that reach. As a result, detention is only required for Reach R5. Therefore, a 7.5-acre-foot detention basin has been proposed for Reach R5, sufficient to detain 100-year flood flows (Figure 4.9-3), such that post-construction runoff would be less than current runoff (Table 4.9-5) and would prevent overtopping of Honey Run Road. This detention basin location was selected because it has generally desirable soil characteristics and is one of the flatter locations in the drainage. Stormwater detention would reduce 100-year storm flows by 49.2 cfs (Table 4.9-5), such that overtopping of Honey Run Road at the western property boundary would not occur. Table 4.9-5 combines Reaches R5 and R6 because these reaches combine immediately off-site, on the southwest side of Honey Run Road. However, as indicated above, detention was only required for Reach R5. Incorporation of these stormwater control features would result in stormwater runoff that is less than existing conditions, thus preventing overtopping of existing roadways, on- and off-site flooding, exceedances of City stormwater infrastructure, and erosive scour on- and off-site.

[15] See Exhibit E.1.0, (Pre) Floodway Section Analysis, and Exhibit E.1.1, (Post) Floodway Section Analysis, of the Draft Drainage Study (Appendix H-1).



SOURCE: VESP 2020

FIGURE 4.9-3

Proposed Reach R5 Detention Basin

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In addition, as described under Impact 4.9-1, projects developed within the VESP would be reviewed by the City for conformity with VESP action LU-3.1, and Goal PROS-4, and action PROS-4.3, which promote the preservation of natural features and the protection and restoration of wetlands and riparian corridors. The overall development plan for the VESP designates approximately 672 acres of the total 1,448- acre area for parks, recreation, and open space. The buffer zones around riparian areas would provide areas that would slow the rates of stormwater runoff to riparian areas and provide space for vegetation that stabilizes the banks of creeks and drainages, thereby reducing the risks of flooding induced erosion and sedimentation. Additionally, the VESP's Foothill Development Standards encourage development on flatter portions of the site with 0 to 10% slopes, require special measures for development of areas with slopes between 10 to 20% and higher. These standards would ensure development occurs predominantly within areas where erosion and sedimentation risks are minimized.

Furthermore, development within the VESP area would be required to comply with the post-construction stormwater runoff management requirements of the Phase II MS4 Permit. As described in Section 4.9.2, Regulatory Setting, the Phase II MS4 Permit would require each development phase within the project to incorporate LID hydromodification measures that would ensure that the rates of post-project runoff do not exceed the estimated pre-project flow rate for the 2-year, 24-hour storm, which would prevent flooding and limit the potential for erosion and sedimentation to occur on-site. In summary, partial diversion of stormwater flows from Reach R1 to R2; construction of detention basins at road crossings in Reach R2, R3, R4, and 4RT; construction of a 7.5-acre-foot detention basin on Reach 5; compliance with the Phase II MS4 Permit post-construction stormwater management requirements; conformity with VESP goals, actions, and development standards; and compliance with City and County ordinances and regulations, would prevent on- and off-site flooding, exceedances of City stormwater infrastructure, and erosive scour on- and off-site. As a result, impacts would be **less than significant.**

Other Flood Hazards

As stated above, the project site is located in FEMA Flood Zone X and is not subject to major flooding. The Draft Drainage Study (Appendix H-1) determined that only localized flooding was observed near existing culverts where surface water is conveyed off-site.

Concerns were raised regarding whether flood hazards within the VESP area are greater since the 2018 Camp Fire, which also burned a large portion of the project site. Large scale wildfires do alter the terrain and ground conditions in a manner that can increase the risk of flash flooding and mud flows (National Weather Service 2015). The flood risk typically remains significantly higher until vegetation is restored, which can take up to 5 years (National Weather Service 2015). The development of the VESP area would occur incrementally over time. It is anticipated that most development would occur after 2023, when any vegetation burned as part of the Camp Fire would have had sufficient time to get reestablished. Therefore, this analysis assumes that there would be not be a substantial increased flood risk on the project site due to the Camp Fire and impacts are **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.9-4 The proposed project could alter the existing drainage pattern that could impede or redirect flood flows.

As stated above, the project site is located in FEMA Flood Zone X and is not subject to major flooding. The Draft Drainage Study (Appendix H-1) determined that only localized flooding was observed near culverts and over roadways where surface water leaves the site.

The proposed project would not substantially impede or redirect localized flood flows. Development under the VESP would maintain buffers around existing creek channels. As shown in Figure 4.9-2, the Draft Drainage Study indicates that the sub-shed areas under post-development conditions would be similar to pre-development conditions (Appendix H-1). Furthermore, the Draft Drainage Study recommends cleaning out existing plugged/buried culverts, which would facilitate flows through existing channels and would not impede or redirect the flows. The VESP does not propose any changes that would impede or redirect off-site flood flows. Therefore, the potential for development under the VESP to impede or redirect flood flows would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.9-5 The proposed project could increase the release of pollutants due to project inundation.

As stated above, the project site is located in FEMA Flood Zone X and is not subject to major flooding. The Draft Drainage Study (Appendix H-1) determined that only localized flooding was observed near culverts and over roadways where surface water leaves the site.

Construction

During the construction of project within the VESP area, inundation waters in construction in areas where local flooding occurs could encounter hazardous materials used during construction, such as paints, solvents, and fuels. Construction materials swept out to surface waters could become floating material, which is considered a pollutant because it can cause a nuisance and adversely affect beneficial uses (Central Valley RWQCB 2018). Projects within the VESP area involving the disturbance of one acre or more would be required to develop and implement a SWPPP in accordance with the Construction General Permit. Projects disturbing less than one acre would be required to develop an erosion and sediment control plan in accordance with the Chapter 15.50.075 of the City's Municipal Code. These plans must include requirements to control storm water pollution due to construction activities including measures for managing hazardous materials used on construction sites and for keeping the construction site maintained in a clean and orderly state, and hazardous materials storage requirements. For example, construction site operators must store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed). These measures would minimize the amounts of pollutants and floating materials that could be swept into receiving waters if a construction site is flooded during construction. For these reasons, the potential for a substantial release of pollutants due to inundation of work and staging areas during localized flooding would be **less than significant**.

Operation

Once constructed, buildings and structures within the VESP may encounter localized flooding. Urban pollutants associated with the proposed land uses could include oils, fuels, and metals associated with motor vehicle traffic; fertilizers and pesticides used to maintain landscaped areas; and trash generated by new site occupants. The levels of urban pollutants occurring on the project site would be minimized through compliance with the Phase II MS4 Permit, which requires projects to identify potential sources of pollutants and implement source control measures. Furthermore, the VESP provides buffers between proposed areas of development and existing on-site creeks that would minimize the potential for inundation of developed areas. The land uses proposed within the VESP area are primarily commercial and residential. None of the proposed land uses would involve the storage or handling of substantial quantities of hazardous materials that could be released should any localized flooding occur. For these reasons, the potential for a substantial release of pollutants from the VESP area to occur due to localized flooding would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.9-6 The proposed project could conflict with a water quality control plan or sustainable groundwater management plan.

Basin Plan

The Basin Plan designates beneficial uses and establishes water quality objectives for water quality within the Sacramento River Basin and San Joaquin River Basin. As discussed under Impact 4.9-1, stormwater quality during construction and operation of the VESP would generally be controlled through compliance with the existing stormwater control regulations, including Chapter 15.50 (Stormwater Management and Discharge Controls), , the Construction General Permit, Phase II MS4 Permit requirements, and VESP development standards. In particular, as described under Section 4.9.2, Regulatory Setting, the Phase II MS4 Permit program elements are designed to ensure discharges from the storm drain system do not contain pollutant loads at levels that violate water quality standards and Basin Plan objectives and policies (such as a TMDL for a CWA Section 303(d) impaired water body). Therefore, compliance with existing regulatory requirements, particularly NPDES permit requirements, would minimize the potential for projects developed within the VESP area to conflict with the Basin Plan. This impact would be **less than significant**.

Vina Groundwater Sustainability Plan

A Groundwater Sustainability Plan has not yet been developed for the portion of the Vina Subbasin where the VESP area is located. Future VESP development projects would be provided domestic water by Cal Water, which supplies water to the Chico District service area by pumping groundwater from the Vina Subbasin. The WSA prepared for the VESP (Appendix J) used conservative estimates to determine that the proposed project would require approximately 1,748 af/yr, and that anticipated water usage in the Chico District would be approximately 24,545 af/yr without the proposed project, and 26,293 af/yr with the proposed project. The WSA estimated that the sustainable pumping range for the Chico District based on historical groundwater changes and pumping levels range from 23,287 af/yr (the approximate level that would result on no groundwater level change) to 33,462 af/yr (the approximate level that would decrease groundwater levels by approximately 1.0 feet per year). Therefore, both with and without the proposed project, groundwater usage

in the Chico District would result in water level declines of less than 1.0 feet per year. These rates of decline are consistent with historical fluctuations in groundwater levels within and near the Chico District which have ranged from -1.0 feet per year to +0.04 feet per year between 2005 and 2018. The WSA concludes that the water demands of VESP, and the demands associated with other development in the Chico District are well within the projected water demand growth envisioned in the 2015 Urban Water Management Plan, and within the demonstrated capacity of the Vina Subbasin to meet demands.

The Vina Groundwater Sustainability Plan, once completed, will provide a detailed road map for how the groundwater basin will reach long-term sustainability while accounting for population growth in the region, such as the population growth induced by projects such as the VESP. Although the proposed project would contribute to increased groundwater usage, the levels of groundwater decline with the project are similar to the historic decline in groundwater levels that have occurred in the past, and the Vina Groundwater Sustainability Plan would be required to address even if the VESP is not developed. Furthermore, groundwater usage by municipal and industrial uses in the region accounts for a small fraction of water usage (9%) usage (Butte County Department of Water and Resource Conservation 2016).

For these reasons, although the development of the VESP would increase groundwater usage in the region, the increased groundwater usage resulting from the proposed project would not be large enough to conflict with or obstruct the implementation of the Vina Groundwater Sustainability Plan that is currently being developed. This impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The context for evaluation of potential cumulative impacts on hydrology and water quality including flooding and stormwater drainage is the Little Chico Creek and Butte Creek watersheds (note that Comanche Creek flows to Little Chico Creek and is therefore part of the Little Chico Creek watershed). The context for the evaluation of the cumulative impacts on groundwater recharge and groundwater supply is the Vina Subbasin.

As stated above under Threshold Criteria not Applicable to the Proposed Project, the project is not located within an area that has the potential to be inundated by a tsunami or seiche mapped by the CCC and therefore could not contribute to a cumulative impact.

4.9-7 The proposed project could contribute to a cumulative impact to water quality.

Cumulative development in currently undeveloped portions of the Little Chico Creek and Butte Creek watersheds would alter existing land uses, which could increase the amount of pollutants in stormwater runoff. Construction activities associated with new development could temporarily increase the number of exposed surfaces that could contribute to sediments in stormwater runoff. Additionally, materials associated with construction activities could be deposited on surfaces and carried to receiving waters in stormwater runoff. This is a potentially significant cumulative impact.

Development of the proposed project, also identified as the Doe Mill/Honey Run Special Planning Area, was contemplated as future development in the City's 2030 General Plan (City of Chico 2017b) and evaluated in the General Plan EIR (City of Chico 2010). The General Plan EIR concludes that compliance with General Plan policies

and actions, Construction General Permit, Phase II MS4 Permit, and the City's Municipal Code requirements related to grading and stormwater management would reduce potential stormwater and groundwater quality impacts due to development under the General Plan to a less-than-significant level and would reduce the General Plan's contribution to regional cumulative impacts to less than cumulatively considerable.

All cumulative development in the Little Chico Creek and Butte Creek watersheds would be subject to the existing regulatory requirements considered in the General Plan EIR to protect water quality and minimize increases in stormwater runoff. For example, the Construction General Permit requires the development and implementation of a SWPPP for all construction sites larger than one acre to mitigate potential impacts to water quality from polluted stormwater runoff. The City of Chico and co-permittee cities and counties within the Little Chico Creek and Butte Creek watersheds are subject to the requirements of the Phase II MS4 Permit. The Phase II MS4 permit requires that the project designer and/or contractor of all regulated projects to implement LID design requirements related to water quality, including the control of erosion and sedimentation. The LID features would address long-term effects on water quality within the Sacramento River watershed and ensure BMPs and LID designs minimize potential water quality concerns to the maximum extent practicable.

Every 2 years, the Central Valley RWQCB must re-evaluate water quality within its geographic region and identify those water bodies not meeting water quality standards. For those impaired water bodies, a TMDL must be prepared and implemented to reduce pollutant loads to levels that would not contribute to a violation of water quality standards. All development within the Little Chico Creek and Butte Creek watersheds are subject to the water quality standards outlined in the Basin Plan and must comply with any established TMDLs. The continuing review process would ensure that cumulative development within the watersheds would not substantially degrade water quality.

Compliance with existing NPDES permit requirements would minimize the potential for the proposed project to degrade water quality and conflict with the Basin Plan. For these reasons, the project's contribution to the potential cumulative degradation of water quality is not considerable resulting in **less-than-significant cumulative impact** related to water quality.

Mitigation Measures

No mitigation measures are required.

4.9-8 The proposed project could contribute to a cumulative impact related to flooding, drainage capacity, and erosion and sedimentation.

Cumulative development in currently undeveloped portions of the Little Chico Creek and Butte Creek watersheds would increase the amount of impervious surfaces that could in turn increase stormwater runoff rates and result in increased flooding, exceedance of stormwater drainage capacity, and increased erosion and sedimentation. The City's General Plan EIR concludes that compliance with General Plan policies and actions, Phase II MS4 Permit, and the City's Municipal Code requirements related to drainage and stormwater management would reduce potential flooding, stormwater drainage capacity, and erosion and sedimentation impacts due to development under the General Plan to a less-than-significant level and would reduce the General Plan's contribution to regional cumulative impacts to less than cumulatively considerable.

Cumulative development projects in the Little Chico Creek and Butte Creek watersheds that create new impervious surfaces would be subject to Phase II MS4 Permit requirements considered in the General Plan EIR. These requirements include implementation of LID hydromodification management measures which would prohibit post-project runoff from the proposed project and cumulative projects from exceeding the estimated pre-project flow rate for the 2-year, 24-hour storm. Although this can effectively reduce localized sedimentation and erosion during smaller storms, particularly in areas that are being redeveloped, new development of large areas of undeveloped land can substantially increase impervious surfaces, which in turn can substantially increase stormwater runoff rates during storms larger than the 2-year, 24-hour storm. However, future development projects within the VESP area would comply with Chapter 15.50 and 18R.08.050 of the City's Municipal Code, which requires development projects to provide stormwater drainage facilities that are large enough to accommodate the additional runoff generated by the creation of new impervious surfaces. The analysis must consider the entire drainage watershed(s) where the subdivision is located. Compliance with the City's Municipal Code and Phase II MS4 Permit requirements at individual cumulative project sites would prevent cumulative impacts related to flooding, drainage capacity, and erosion-induced sedimentation, such that impacts would not be cumulatively considerable and would be **less-than-significant**.

Mitigation Measures

No mitigation measures are required.

4.9-9 The proposed project could contribute to a cumulative impact to groundwater supply and groundwater recharge that could impede the sustainable management of the Vina Subbasin.

Groundwater Supply

Development of new projects within the Vina Subbasin would increase land use intensities in the area, resulting in increased water demand and usage. The proposed project along with other projects in Chico are served by Cal Water and are part of the Chico District service area. As such, development of the proposed project and related projects would increase the amount of water used in Cal Water's Chico District service area, which could result in a cumulatively significant impact to groundwater supplies in the region.

The City's General Plan EIR evaluates projected groundwater usage and concludes that there is sufficient water supply available to allow for the sustainable usage of groundwater under the buildout of the General Plan. The General Plan EIR indicates that the General Plan Update Action PPFS-5.1.1 requires the City to work with Cal Water to periodically reevaluate the projected availability of groundwater usage in the region and define the specific measure that need to be implemented to ensure sustainably levels of groundwater. Lastly, the General Plan EIR notes that the General Plan preserves critical recharge areas in the foothills and riparian areas. For these reasons, the General plan EIR concludes that the groundwater supply impacts due to development under the General Plan would be less than significant and less than cumulatively considerable.

Cal Water has an Urban Water Management Plan which plans for the provision of regional water, during normal, dry, and multiple dry years (Cal Water 2015). The plan uses regional population, land use plans, and projections of future growth as the basis for planning water system improvements (including water treatment plants) and demonstrating compliance with state water conservation goals and policies. As such, to the extent that related projects are generally consistent with regional growth patterns and projections, the projects would not be expected to result in increased water usage causing the need for new entitlements, resources, and/or treatment facilities that are not already being planned to accommodate regional growth forecasts.

As described under Impact 4.9-2 above, the WSA prepared for the proposed project (Appendix J) estimated that the sustainable pumping range for the Chico District based on historical groundwater changes and pumping levels range from 23,287 af/yr (the approximate level that would result on no groundwater level change) to 33,462 af/yr (the approximate level that would decrease groundwater levels by approximately 1.0 feet per year). Anticipated water usage in the Chico District in the year 2040 would be approximately 24,545 af/yr without the proposed project, and 26,293 af/yr with the proposed project. Therefore, both with and without the proposed project, cumulative groundwater usage in the Chico District would result in water level declines of less than 1.0 feet per year. These rates of decline are slow enough to not result in sudden or unexpected undesirable effects on groundwater beneficial uses and users. Furthermore, the rates of decline are consistent with historical fluctuations in groundwater levels within and near the Chico District which have ranged from -1.0 feet per year to +0.04 feet per year between 2005 and 2018. Because the Vina subbasin is not in a state of critical overdraft, continued annual groundwater declines of less than 1.0 feet per year would not be substantial or unreasonable.

The Vina Groundwater Sustainability Plan, once completed, will provide a detailed road map for how the groundwater basin will reach long-term sustainability while accounting for population growth in the region, including future population that would occur as a result of future cumulative projects. Although the proposed project along with other projects would contribute to increased groundwater usage, results of the WSA indicate that the levels of groundwater decline in the Cal Water Chico District would be similar to the historic decline in groundwater levels that have occurred in the past. The Vina Groundwater Sustainability Plan would be required to address similar rates of decline even if the project and future cumulative projects within the Chico District are not developed. Furthermore, groundwater usage by municipal and industrial uses accounts for a small fraction of total groundwater usage (9%) in the region usage (Butte County Department of Water and Resource Conservation 2016). Consequently, the management of agricultural groundwater usage would be the determining factor in sustainable management of the region's groundwater resources.

The anticipated water usage Cal Water's Chico District would not result in groundwater levels declines of more than 1.0 feet per year and these declines would be within historical levels of decline that would be addressed by the Vina Groundwater Sustainability Plan. Furthermore, the proposed project would not substantially increase groundwater usage relative to existing agricultural uses, which account for the majority of groundwater use in the region. For these reasons, the project's incremental contribution to the potential cumulative impact on groundwater usage, groundwater supplies, and interference with the sustainable management of the Vina Subbasin would not be cumulatively considerable resulting in a **less-than-significant cumulative impact**.

Groundwater Recharge

The proposed project along with other cumulative projects would increase impervious surfaces in the subbasin. The addition of impervious surfaces to areas that are critical to groundwater infiltration and recharge would interfere with infiltration, which in turn could decrease groundwater recharge within the Vina Subbasin. Depending on the location of cumulative development, this could result in a substantial decrease in groundwater levels in the Vina Subbasin and interfere with the sustainable management of the groundwater basin and the implementation of the Groundwater Sustainability Plan to be developed for the Vina Subbasin. This is a potentially significant cumulative impact.

As described above, the General Plan EIR notes that the General Plan preserves critical recharge areas in the foothills and riparian areas and concludes that the potential for development under the General Plan to substantially reduce groundwater recharge and thereby result in inadequate water supplies would be less than significant and less than cumulatively considerable.

As described under Impact 4.9-2, the VESP is not located in an area critical to groundwater infiltration and recharge because it is underlain by the relatively impermeable Tuscan formation unit C. Furthermore, the VESP would maintain open spaces between areas of proposed development and on-site creeks, which are the areas where alluvial materials are located and groundwater recharge has the greatest potential to occur. For these reasons, the proposed project's incremental contribution to the potentially significant cumulative impact related to groundwater recharge would be **less than cumulatively considerable**.

Mitigation Measures

No mitigation measures are required.

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4.10 Noise

4.10.0 Introduction

This section describes the existing ambient noise environment including relevant acoustic fundamentals, ambient noise conditions, summary of regulations applicable to implementation of the Valley's Edge Specific Plan project (VESP or proposed project) and identifies noise sensitive land uses proximate to the project site. Thresholds of significance are presented and an analysis of potential effects associated with implementation of the proposed project. Descriptions and analyses presented within this section are based on noise modeling performed by Dudek.

Comments received in response to the Notice of Preparation (NOP) from the public include concerns regarding construction noise and traffic noise for the proposed project. A copy of the NOP and comments received is included in Appendix A.

The primary sources reviewed to prepare this section include the 2017 update to the City of Chico 2030 General Plan and the VESP. The noise modeling outputs are included in this EIR as Appendix I.

4.10.1 Environmental Setting

This section provides background information and terminology relevant to the noise assessment and describes the existing ambient noise environment that characterizes the project area and immediately adjacent properties.

Acoustic Fundamentals

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature, and can vary substantially from person to person. Common sources of environmental noise and relative noise levels are shown in Table 4.10-1.

A sound wave is initiated in a medium by a vibrating object (e.g., vocal cords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz (Hz), which is equivalent to one complete cycle per second.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the decibel (dB) scale was introduced. Sound level expressed in decibels (dB) is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure and the second pressure being that of the sound source of concern. For sound pressure in air, the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the million-fold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. 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). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason, the dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Table 4.10-1. Typical Noise Levels Associated with Common Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock Band
Jet Flyover at 1,000 feet	—	—
—	100	—
Gas Lawn Mower at three feet	—	—
—	90	—
Diesel Truck at 50 feet, 50 mph	—	Food Blender at 3 feet
—	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		—
—	70	Vacuum Cleaner at 10 feet
Commercial Area	—	Normal speech at 3 feet
Heavy Traffic at 300 feet	60	—
—	—	Large Business Office
Quiet Urban Daytime	50	Dishwasher (in next room)
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime	—	—
—	30	Library
Quiet Rural Nighttime	—	Bedroom at Night, Concert Hall (background)
—	20	—
—	—	Broadcast/Recording Studio
—	10	—
Lowest Threshold of Human Hearing (Healthy)	0	Lowest Threshold of Human Hearing (Healthy)

Source: Caltrans 2013a.

Noise can be generated by a number of sources, including mobile sources (transportation) such as automobiles, trucks, and airplanes and stationary sources (non-transportation) such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) depending on ground absorption

characteristics, atmospheric conditions, and the presence of physical barriers (e.g., walls, building façades, berms). Noise generated from mobile sources generally attenuate at a rate of 3dBA (typical for hard surfaces, such as asphalt) to 4.5 dBA (typical for soft surfaces, such as grasslands) per doubling of distance, depending on the intervening ground type. Stationary noise sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dBA per doubling of distance for hard and soft sites, respectively.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or "shielding" provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as earthen berms, hills, or dense woods as well as man-made features such as buildings, concrete berms and walls may be effective barriers for the reduction of source noise levels.

Noise Descriptors

The intensity of environmental noise levels can fluctuate greatly over time and as such, several different descriptors of time-averaged noise levels may be used to provide the most effective means of expressing the noise levels. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment near the receptor(s). Noise descriptors most often used to describe environmental noise are defined below.

***Lmax (Maximum Noise Level)*:** The maximum instantaneous noise level during a specific period of time.

***Lmin (Minimum Noise Level)*:** The minimum instantaneous noise level during a specific period of time.

Lx (Statistical Descriptor): The noise level exceeded *"X"* percent of a specific period of time. For example, L50 is the median noise level, or level exceeded 50% of the time.

***Leq (Equivalent Noise Level)*:** The average noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the Leq. In noise environments determined by major noise events, such as aircraft over-flights, the Leq value is heavily influenced by the magnitude and number of single events that produce the high noise levels.

***Ldn (Day-Night Average Noise Level)*:** The 24-hour Leq with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The Ldn attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

***CNEL (Community Noise Equivalent Level*):** The CNEL is similar to the Ldn described above, but with an additional 5-dBA "penalty" added to noise events that occur during the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading and television. When the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dBA higher than the Ldn.

***SEL (Sound Exposure Level)*:** The cumulative exposure to sound energy over a stated period of time; typically the energy of an event, summed into a one second period of time.

Community noise is commonly described in terms of the ambient noise level which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent sound level (Leq)which corresponds to the steady-state A-weighted sound level containing the same total energy as the time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptors such as Ldn and CNEL, as defined above, and shows very good correlation with community response to noise. Use of these descriptors along with the maximum noise level occurring during a given time period provides a great deal of information about the ambient noise environment in an area.

Negative Effects of Noise on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The non-auditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance and dissatisfaction, which lead to interference with activities such as communications, sleep and learning. The non-auditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The majority of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be to an individual.

With respect to how humans perceive and react to changes in noise levels, a 1 dBA increase is generally imperceptible outside of a laboratory environment, a 3 dBA increase is barely perceptible, a 6 dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 1988). These subjective reactions to changes in noise levels was developed on the basis of test subjects' reactions to changes in the levels of steady-state, pure tones or broad-band noise and to changes in levels of a given noise source. Perception and reaction to changes in noise levels in this manner is thought to be most applicable in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels.

Vibration Fundamentals

Vibration is similar to noise in that it is a pressure wave traveling through an elastic medium involving a periodic oscillation relative to a reference point. Vibration is most commonly described in respect to the excitation of a structure or surface, such as in buildings or the ground. Human and structural response to

different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions, impacts). Vibration levels can be depicted in terms of amplitude and frequency; relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal, or the quantity of displacement measured from peak to trough of the vibration wave. Root-mean-square is defined as the positive and negative statistical measure of the magnitude of a varying quantity. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of one second. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (Federal Transit Administration [FTA] 2018). PPV and RMS vibration velocity are nominally described in terms of inches per second (in/sec). However, as with airborne sound, vibration velocity can also be expressed using decibel notation as vibration decibels (VdB). The logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration and allow for the presentation of vibration levels in familiar terms.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. Human response to vibration has been found to correlate well to average vibration amplitude; therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity.

Typical outdoor sources of perceptible groundborne vibration include construction equipment, steel-wheeled trains, and vehicles on rough roads. Although the effects of vibration may be imperceptible at low levels, effects may result in detectable vibrations and slight damage to nearby structures at moderate and high levels, respectively. At the elevated levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in damage to structural components. The range of vibration relevant to this analysis occurs from approximately 60 VdB, which is the typical background vibration-velocity level; to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (FTA 2018). Table 4.10-2 identifies some common sources of vibration, corresponding VdB levels, and associated human perception and potential for structural damage.

Table 4.10-2. Typical Levels of Ground-borne Vibration

Human/Structural Response	Velocity Level, VdB (re 1µinch/sec, RMS)	Typical Events (50-foot setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment
—	95	Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Difficulty with tasks such as reading a video or computer screen	90	Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range

Table 4.10-2. Typical Levels of Ground-borne Vibration

Human/Structural Response	Velocity Level, VdB (re 1µinch/sec, RMS)	Typical Events (50-foot setback)
Residential annoyance, occasional events	75	Commuter rail, typical bus or truck over bump or on rough roads
Residential annoyance, frequent events	72	Rapid transit, typical
Approximate human threshold of perception to vibration	65	Buses, trucks, and heavy street traffic
—	60	Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration	50	—

Source: FTA 2018.

Existing Noise Environment

The VESP (project area) is located in unincorporated Butte County within the City of Chico's (City) Sphere of Influence adjacent to the eastern boundary of the City. The project area is generally bounded by Stilson Canyon to the north; Honey Run Road and Skyway to the south; and the Steve Harrison Memorial Bike Path to the west. The project area is currently undeveloped agriculture land, leased for cattle grazing. Developed areas surrounding the project area include a mix of commercial uses to the south, single-family residential and open space to the north/northwest and undeveloped land to the east. Land to the west of the Bike Path, within the City limits, is planned as an open space preserve associated with the recently approved Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone (Stonegate residential subdivision project). The Stonegate residential subdivision project would subdivide a 313-acre site into a combination of open space, parks, single-family and multi-family residential, and commercial uses.

The project area has a number of existing noise sources influencing the ambient noise environment. The most dominant noise source is transportation noise; primarily generated from vehicular traffic on the local and regional roadway network. Light industrial facilities and commercial areas south and southwest also contribute to the ambient noise levels, but to a lesser extent.

The existing ambient noise environment was quantified through field surveys, sound level measurements and through the application of accepted reference data and noise prediction methodologies. Separate discussions of identified major noise sources and their respective effects are provided in the following sections.

Existing Noise-Sensitive Land Uses

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of the 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.

Noise-sensitive land uses nearest the project area are located approximately 40 feet west of the northern portion of the project, north of E. 20th Street/Doe Mille Road. Other noise-sensitive land uses in the vicinity of the project area are primarily single-family residences generally located south of Honey Run Road and north of Doe Mill Road. Existing land uses in the project vicinity are further outlined within Section 2.2 in Chapter 2, Project Description.

Existing Ambient Noise Survey

Sound level measurements were conducted between January 27 and 28, 2020, to document the existing noise environment within and adjacent to the project area to establish baseline noise conditions against which to compare project operational noise levels. Specific consideration was given to document noise levels in the vicinity of nearby noise-sensitive receptors, and additionally to document existing periodic noise source levels. All Noise measurements were performed in accordance with American National Standards Institute (ANSI) and American Standards for Testing and Measurement (ASTM) guidelines, at five locations in and around the project area, as shown on Figure 4.10.1.

Noise measurements were performed using Larson Davis Laboratories (LDL) Model 831, Type 1 precision integrating sound level meters (SLMs). Field calibrations were performed on the SLMs with acoustic calibrators before and after the measurements. All instrumentation components, including microphones, preamplifiers and field calibrators have laboratory certified calibrations traceable to the National Institute of Standards and Technology (NIST). The equipment used meets all pertinent specifications of the ANSI for Type 1 SLMs (ANSI S1.4-1983 [R2006]). Meteorological conditions during the monitoring periods were fair with temperatures ranging from 49 to 60 degrees Fahrenheit (F), light winds from 0 to 10 mph, and partly cloudy skies. No precipitation was experienced during the monitoring periods.

Long-term noise monitoring (24 hour) was performed at two locations in the project area, one adjacent to the northern project boundary and one adjacent to the southern project boundary. Sound level monitoring was performed at locations representative of noise-sensitive land uses adjacent to the northern and southern project boundaries. The long-term noise monitoring equipment was configured to operate in a continuous manner, cataloging all noise metrics pertinent to identification and evaluation of noise levels (i.e., Leq, Lmax, Ln, etc.) in the project vicinity. Ambient noise levels recorded at the long-term noise monitoring locations are presented in Table 4.10-3 and shown in Figure 4.10-1.

Table 4.10-3. Summary of Long-Term Ambient Noise Measurements

Site	Location	Ldn	Average Noise Levels (dBA)							
			Daytime				*Nighttime*			
			Leq	*Lmax*	*L50*	*L90*	*Leq*	*Lmax*	*L50*	*L90*
LT-1	Southern Project Area	54.5	52.2	66.5	49.3	46.8	46.7	61.9	44.0	42.3
LT-2	Northern Project Area	50.9	46.4	62.9	43.6	41.5	44.1	56.2	40.3	37.3

Source: Dudek 2020.
Notes: dBA = A-weighted decibels; Ldn = Day Night noise level; Leq = average equivalent noise level; Lmax = maximum noise level; L50 = sound level exceeded 50% of the period; L90 = sound level exceeded 90% of the period.

The primary noise source affecting all of the noise monitoring locations was vehicular traffic on the local and regional roadway network. Additional noise sources experienced during noise-monitoring included construction activities west of the northern project area boundary, general landscaping activities, and an aircraft overflight. Ambient noise level exposure at the monitoring locations were dependent on the relative distance from nearby roadways to noise measurement locations and shielding provided by nearby existing structures. During the long-term noise monitoring, average day-night (Ldn) noise levels ranged from approximately 51 to 55 dBA Ldn. The existing ambient noise levels at the long-term monitoring locations were in compliance with the City's maximum transportation noise levels for residential land uses.

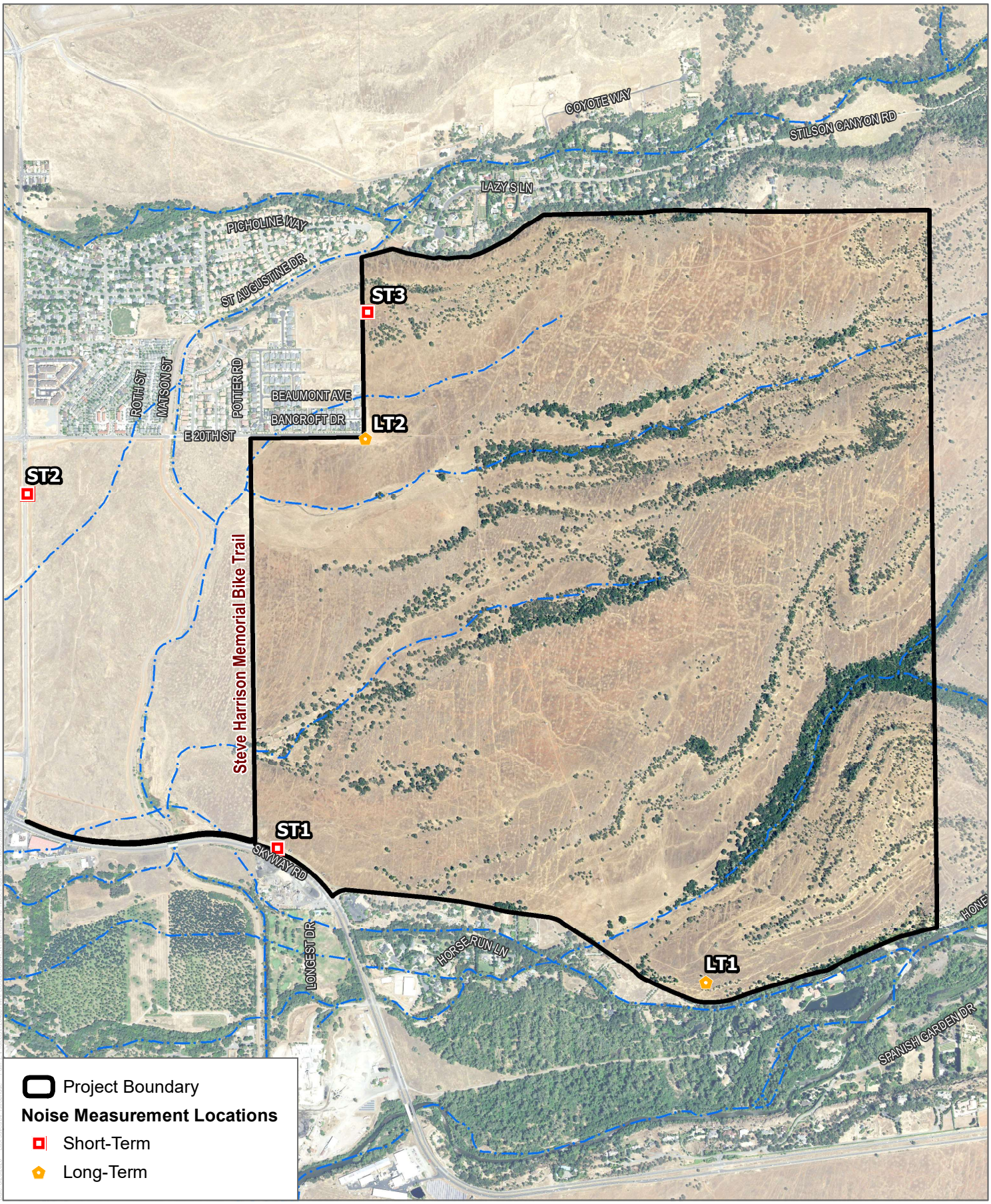
Short-term noise monitoring (10-minute duration) was conducted at three locations to provide additional insight into the existing ambient noise environment. Concurrent manual traffic counts and vehicle classification was performed during the short-term monitoring at locations ST-1 and ST-2, to aid in quantifying traffic noise levels. Monitoring equipment was configured to catalog pertinent noise metrics as identified above. Ambient noise level data cataloged at the short-term monitoring locations is presented in Table 4.10-4 and also shown on Figure 4.10-1.

Table 4.10-4. Summary of Short-Term Ambient Noise Measurements (10-minute Duration)

Site	Location	Date/Time	Average Noise Levels (dBA)			
			Leq	*Lmax*	*L50*	*L90*
ST-1	Adjacent to Skyway Road	01/28/2020 14:30	70.7	81.3	68.9	62.0
ST-2	Adjacent to Bruce Road	01/28/2020 14:55	71.5	80.0	70.2	59.5
ST-3	Northern Project Area	01/28/2020 15:20	39.2	44.8	38.9	37.4

Source: Dudek 2020.
Notes: All measurements performed for 10 minutes in duration. dBA = A-weighted decibels; Ldn = Day Night noise level; Leq = average equivalent noise level; Lmax = maximum noise level; L50 = sound level exceeded 50 percent of the period; L90 = sound level exceeded 90% of the period.

Short-term monitoring recorded average noise levels (Leq) ranging from approximately 39 to 72 dBA, with background (L90) noise levels ranging from approximately 37 to 62 dBA and maximum noise levels from 45 to 81 dBA Lmax.



SOURCE: USDA 2016, USGS NHD 2018

DUDEK

0 750 1,500 Feet

FIGURE 4.10-1

Noise Measurement Locations

Valley's Edge Specific Plan Project

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Existing Traffic Noise

Existing traffic noise levels were modeled for roadway segments in the project vicinity based on the Federal Highway Administration (FHWA) Highway Traffic Noise Model 2.5 (TNM 2.5) prediction methodologies (FHWA 2004), and traffic data provided in the traffic impact study prepared for the project (Fehr and Peers 2020). The FHWA TNM incorporates state-of-the-art sound emissions and sound propagation algorithms, based on well-established theory and accepted international standards. The acoustical algorithms contained within the FHWA TNM have been validated with respect to carefully conducted noise measurement programs and show excellent agreement in most cases for sites with and without noise barriers. The noise modeling accounted for factors such as vehicle volume, speed, vehicle type, roadway configuration, distance to the receiver, and propagation over different types of ground (acoustically soft and hard ground).

In order to ensure that modeled existing traffic noise levels correlate with measured traffic noise levels, observations and data collected during short-term noise monitoring was used to calibrate the traffic model. Modeled average traffic noise levels were found to be reasonably consistent with traffic noise measurements conducted at the project site, over predicting traffic noise levels by less than 1 dB. As this is within the tolerances of the traffic noise prediction model calibration offsets were not applied to the model.

Modeled existing traffic noise levels are summarized in Table 4.10-5, within the outdoor activity area of noise-sensitive receptor in greatest proximity to the respective roadway segment. The extent to which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways, shielding provided by intervening objects and their individual sensitivity to noise. As shown in Table 4.10-5, existing traffic noise levels within outdoor activity areas of noise-sensitive land uses adjacent to major roadway segments in the project vicinity ranged from approximately 57 to 70 dBA Ldn. Refer to Appendix I for complete modeling inputs and results.

Table 4.10-5. Summary of Modeled Existing Traffic Noise Levels

Roadway	Segment	ADT	Distance from Roadway Centerline to Receiver, feet	Noise Level, dBA Ldn
Bruce Rd	S of Humboldt Rd	13,053	70	**66.6**
Bruce Rd	N of E 20th St	14,616	60	**66.6**
E. 20th St	At Dawncrest Dr	1,052	45	57.6
E. 20th St	W of Bruce	8,885	45	62.7
E. 20th St	W of Notre Dame	10,380	N/A	**68.2**
Notre Dame Blvd	S of E 20th St	2,584	85	59.1
Skyway	E of Bruce Rd	35,524	165	64.7

Source: Dudek 2020.
Notes: dBA = A-weighted decibels; Ldn = average day–night noise level.
Bold – Noise level exceeding City threshold for transportation noise sources at residential receptors.
ADT – Average Daily Traffic Volumes. ADT volumes based on data provided by the project traffic consultant. Not accounting for shielding provided by natural or man-made intervening objects.

Existing Aircraft Operations

The project area is located approximately 5.3 miles south of Chico Municipal Airport. The project area is not located within the currently adopted 60 or 65 dB CNEL\Ldn noise contours of the Airport Land Use Compatibility Plan for the Butte County Airport Land Use Commission (Butte County 2017). During the noise monitoring survey, one aircraft over-flight was documented. While specific information about the aircraft was unavailable, the aircraft appeared to be a private general aviation single-propeller aircraft.

Existing Vibration

The existing vibration environment, similar to that of the noise environment, is dominated by transportation-related vibration from roadways adjacent to the project area. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the roadway right-of-way.

4.10.2 Regulatory Setting

Various private and public agencies have established noise guidelines and standards to protect the public from potential hearing damage and other adverse physiological and sociological effects associated with noise. Applicable standards and guidelines are described below.

Federal Regulations

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency's (EPA's) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, the EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in the EPA rulings in prior years are still adhered to by designated federal agencies where relevant. No federal noise regulations are applicable to the proposed project.

Federal Transit Administration – Vibration

FTA has set forth guidelines for maximum-acceptable vibration criteria to address the human response to groundborne vibration for different types of land uses. These include 65 VdB (re: µ-in/sec RMS) for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of EPA (FTA 2006).

State Regulations

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

California Code of Regulations, Title 24

Title 24, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The current 2019 code provides acoustical regulations for both exterior-to-interior sound insulation as well as sound and impact isolation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dBA Ldn, with windows closed, in any habitable room for general residential uses. These regulations are applicable to the proposed project.

Governor's Office of Planning and Research

The State of California, Governor's Office of Planning and Research (OPR), published the State of California General Plan Guidelines (OPR 2003), which provides guidance for the acceptability of projects within specific day-night average noise level (Ldn) contours. Table 4.10-6 summarizes acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to help craft 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.

Generally, residential uses (e.g., single-family homes, mobile homes, etc.) are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA Ldn. Residential uses are normally unacceptable in areas exceeding 70 dBA Ldn and conditionally acceptable within 55 to 70 dBA Ldn. Schools are normally acceptable in areas up to 70 dBA Ldn and normally unacceptable in areas exceeding 70 dBA Ldn. Commercial uses are normally acceptable in areas up to 70 dBA Ldn. Between 67.5 and 77.5 dBA Ldn, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements.

Table 4.10-6. Summary of Land-Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (dBA Ldn)			
	Normally Acceptable[1]	*Conditionally Acceptable*[2]	*Normally Unacceptable*[3]	*Clearly Unacceptable*[4]
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multifamily	<65	60–70	70–75	75+
Transient Lodging—Motel, Hotel	<65	60–70	70–80	80+
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60–70	70–80	80+
Auditoriums, Concert Halls, Amphitheaters	—	<70	65+	—
Sports Arena, Outdoor Spectator Sports	—	<75	70+	—
Playgrounds, Neighborhood Parks	<70	—	67.5–75	72.5+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	<75	—	70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	—

Table 4.10-6. Summary of Land-Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (dBA Ldn)			
	Normally Acceptable[1]	*Conditionally Acceptable*[2]	*Normally Unacceptable*[3]	*Clearly Unacceptable*[4]
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	—

Source: OPR 2003.
Notes: dBA = A-weighted decibels; Ldn = day-night average noise level

1 Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

2 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

3 New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

4 New construction or development should generally not be undertaken.

California Department of Transportation – Vibration

There are no state standards for vibration. However, for the protection of historic and residential structures, the California Department of Transportation (Caltrans) recommends a threshold of 0.3 in/sec PPV for older residential structures and 0.25 in/sec PPV for historic building and some old buildings (Caltrans 2013b).

Local Regulations

Local noise standards contained in the City of Chico General Plan and Chico Municipal Code are described below. See also Chapter 3, Land Use and Planning for an evaluation of environmental impacts due to conflicts with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

City of Chico 2030 General Plan

Applicable noise standards in the City's 2030 General Plan are contained within Chapter 13, Noise Element. The Noise Element contains specific goals, policies and guidelines for use in planning and land compatibility determinations within the City. The following goals, policies and actions are relevant to the proposed project.

Goal N-1: To benefit public health, welfare and the local economy, protect noise-sensitive uses from uses that generate significant amounts of noise.

Policy N-1.1 (New Development and Transportation Noise) – New development of noise-sensitive land uses will not be permitted in areas exposed to existing or planned transportation noise sources that exceed the levels specified in Table N-1, unless the project design includes measures to reduce exterior and interior noise levels to those specified in Table N-1 (Table 4.10-7 of this EIR).

Policy N-1.2 (New Development and Non-Transportation Noise) – New development of noise-sensitive land uses will not be permitted in areas exposed to existing non-transportation noise sources that exceed the levels specified in Table N-2, unless the project design includes measures to reduce exterior noise levels to the unadjusted levels specified in Table N-2 (Table 4.10-8 of this EIR).

Policy N-1.3 (Acoustical Analysis) – Where proposed projects are likely to expose noise-sensitive land uses to noise levels exceeding the City's standards, require an acoustical analysis as part of environmental

review so that noise mitigation measures may be identified and included in the project design. The requirements for the content of an acoustical analysis are outlined in Table N-3.

Policy N-1.4 (Roadway Improvement Projects) – Where proposed roadway improvement projects are likely to expose noise-sensitive land uses to noise levels exceeding the standards in Table N-1 or an increase of 10 dB Ldn or more in ambient noise levels, conduct an acoustical analysis to determine the level of impacts and to identify feasible noise mitigation measures that could be included in the project design to minimize impacts.

Action N-1.4.1 (Roadway Project Significance Criteria) – For roadway improvement projects where an acoustical analysis demonstrates that it is not practical to reduce traffic noise levels to be consistent with Table N-1, the following criteria will be used as a test of significance for the environmental review:

- Where existing traffic noise levels are less than 65 dB Ldn in the outdoor activity areas of noise-sensitive uses, a +8 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.
- Where existing traffic noise levels range between 65 and 70 dB Ldn in the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.
- Where existing traffic noise levels are greater than 70 dB Ldn in the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.

Policy N-1.6 (Construction Activity) – Maintain special standards in the Municipal Code to allow temporary construction activity to exceed the noise standards established in this element, with limits on the time of disturbance to nearby noise-sensitive uses.

Goal N-2: Encourage noise attenuation methods that support the goals of the General Plan.

Policy N-2.1 (Well-Designed Noise Mitigation) – Utilize effective noise attenuation measures that complement the Community Design Element's Goals.

Action N-2.1.1 (Noise Control Measures) – Limit noise exposure through the use of insulation, building design and orientation, staggered operating hours, and other techniques. Utilize physical barriers such as landscaped sound walls only when other solutions are unable to achieve the desired level of mitigation.

Table 4.10-7. (Table N-1 of the General Plan) Maximum Allowable Noise Levels from Transportation Noise Sources

Land Use Category	Outdoor Activity[1] Areas Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	*Leq, dB*[2]
Residential	65[3]	45	—
Transient Lodging	—	45	—
Hospitals, Nursing Homes	65[3]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	65[3]	—	40
Office Buildings	—	—	45

Table 4.10-7. (Table N-1 of the General Plan) Maximum Allowable Noise Levels from Transportation Noise Sources

Land Use Category	Outdoor Activity[1] Areas Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	*Leq, dB[2]*
Schools, Libraries, Museums	65[3]	—	45
Playgrounds, Neighborhood Parks	70	—	—

Source: City of Chico, General Plan Noise Element, 2011.
Notes:
1 Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at the patios or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area. For noise-sensitive land uses that do not include outdoor activity areas, only the interior noise standard shall apply.
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 65 dB Ldn/CNEL or less using all feasible noise reduction measures, an exterior noise level of up to 70 dB Ldn/CNEL may be allowed provided that interior noise levels are in compliance with this table.

Table 4.10-8. (Table N-2 of the General Plan) Maximum Allowable Exterior Noise Levels from Non-Transportation Sources

Noise Level Descriptor (dBA)	Exterior Noise Level (dBA)	
	Daytime (7 a.m. to 10 p.m.)	*Nighttime (10 p.m. to 7 a.m.)*
Average-Hourly Noise Level (L_{eq})	55	50
Intermittent Noise Level (L_2 or L_{max})	75	65

Source: City of Chico, General Plan Noise Element, 2011.
Notes:
1 Noise levels are for planning purposes and may vary from the standards of the City's Noise Ordinance, which are for enforcement purposes.
2 Noise levels shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Noise level standards do not apply to mixed-use residential units established in conjunction with industrial or commercial uses provided interior noise levels remain below 45 dB Ldn/CNEL.
3 In areas where the existing ambient noise level exceeds the established daytime or nighttime standard, the existing level shall become the respective noise standard and an increase of 3 dBA or more shall be significant. Noise levels shall be reduced 5 dBA if the existing ambient hourly Leq is at least 10 dBA lower than the standards.
4 Noise standards are to be applied at outdoor activity areas with the greatest exposure to the noise source. When it is not practical to mitigate exterior noise levels at patio or balconies of multi-family dwellings, a common area or onsite park may be designated as the outdoor activity area.

City of Chico Municipal Code

The Chico Municipal Code serves to further protect the welfare and the peace and quiet of the community through the establishment of both objective and subjective methods for determining non-compliance with the City's noise regulations. The City has enumerated these standards and methods of enforcement in Chapter 9.38 of the City Code. Generally, the ordinance prohibits the generation of noise in exceedance of 70 dBA at the property line of residential or commercial property (for residential property, the noise level shall not exceed 60 dBA between 9 PM and 7 AM).

Municipal Code Section 9.38.060.B addresses construction noise:

- Notwithstanding any other provision of this chapter, between the hours of ten a.m. and six p.m. on Sundays and holidays, and seven a.m. and nine p.m. on other days, construction, alteration or repair of structures shall be subject to one of the following limits:
  - No individual device or piece of equipment shall produce a noise level exceeding eighty-three (83) dBA at a distance of twenty-five (25) feet from the source. If the device or equipment is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close as possible to twenty-five (25) feet from the equipment.
  - The noise level at any point outside of the property plane of the project shall not exceed eighty-six (86) dBA.
- Notwithstanding any other provision of this chapter, including but not limited to subsection B.1 of this section, for new residential development projects, or construction, alteration or repairs taking place in commercial or industrial zones between June 15 - September 15, of each calendar year, work will be allowed between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays, and 6:00 a.m. and 9:00 p.m. on other days. Construction, alteration or repairs of structures shall be subject to one of the following limits:
  - No individual device or piece of equipment shall produce a noise level exceeding eighty-three (83) dBA at a distance of twenty-five (25) feet from the source. If the device or equipment is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close as possible to twenty-five (25) feet from the equipment.
  - The noise level at any point outside of the property plane of the project shall not exceed eighty-six (86) dBA.

Valley's Edge Specific Plan

The VESP contains subjective design guidelines to assist in directing appropriate development within the project area. These policies and actions would direct development and future buildout of all phases of the project. Design guidelines pertaining to noise and vibration are provided below. The VESP also includes phasing of infrastructure, described below that relates to noise due to vehicle trips.

Appendix A – Design Guidelines

A.5.3 Open Spaces

n) Outdoor use areas should be sheltered as much as possible from the noise and traffic of adjacent streets and other incompatible uses.

A.6.6 Site Furnishings & Materials

b) Textured and colored pavement should be used on crosswalks to accentuate pedestrian crossings. Pavers in the street are helpful to raise awareness through increased visibility, noise, and vibration.

Walls and Fencing

h) Solid masonry walls along collector and local streets should be allowed only when retaining or noise attenuation is required per environmental sound study.

Chapter 7 Administration and Implementation

As noted on page 7-8, "Phasing of the major collector and the minor internal roads lying between north and south areas (referred to as "mid" phases) will be warranted by market demand and dictated by such things as traffic circulation, secondary emergency access, and on- and off-site infrastructure capacity. Notwithstanding, residential development in the Multi-Generational neighborhoods shall be limited to 450 dwelling units until such time as vehicular connectivity extends to the primary entry along Skyway, unless otherwise determined by the Community Development Director.

4.10.3 Impacts and Mitigation Measures

Methods of Analysis

Potential noise impacts associated with the proposed project were calculated and analyzed based on project information; information contained in the traffic analysis prepared for this project; and data obtained during on-site noise monitoring. Observations made during the site survey along with land-use information and aerial photography were used to determine potential locations of sensitive receptors in the project vicinity. CEQA requires that the noise impacts *caused by* the project be considered; for proposed residential and commercial development, the principal source of project-generated noise is the addition of vehicle trips to area roadways. As a result, noise impacts resulting from increases in off-site traffic noise levels along roadways which would provide access to the project site must be evaluated.

Traffic noise modeling involved the calculation of baseline and cumulative traffic noise levels along roadway segments where the proposed project elements would contribute additional vehicle trips, based on traffic data developed as part of the traffic impact analysis prepared for the project (Fehr & Peers 2020). Traffic noise levels were calculated based on the FHWA TNM 2.5 prediction algorithms (FHWA 2020). Traffic noise levels were modeled for Existing No Project (Near Term Future (2025)) and Cumulative plus-Project conditions. Modeling outputs for the Cumulative plus Project scenario were evaluated against the Near Term Future (2025) conditions to determine the potential for an increase of traffic noise levels and exceedance of applicable noise level criteria and impact thresholds.

To determine existing Ldn traffic noise levels in the project vicinity, the average daily traffic (ADT) volumes for roadways in the immediate vicinity of the project site were used as inputs to the noise model. Traffic data was provided directly in the form of segment volumes from Fehr & Peers, the traffic consultant. Standard assumptions were used and inputs to the model for diurnal traffic patterns and vehicle classifications (i.e., small automobiles, medium trucks, heavy trucks, motorcycles and buses).

Construction Noise and Vibration

Construction-related noise effects were assessed with respect to nearby noise-sensitive receptors and their relative exposure (accounting for intervening topography, barriers, distance, etc.), based on application of FHWA Roadway Construction Noise Model (RCNM) and FTA reference noise level data and usage-factors. Noise levels from various types of construction equipment is provided in Table 4.10-9. Construction noise levels were predicted using reference noise emission data and operational parameters contained in the FHWA RCNM and the FTA guidance manual and the default construction fleet assumptions used in the air quality analysis.

Table 4.10-9. Noise Levels from Construction Equipment

Equipment Type	Maximum Noise Levels, L_{max} (dBA) at 50 feet
Air Compressor	80
Asphalt Paver	80
Backhoe	80
Compactor	82
Concrete Pump	90
Concrete Saw	85
Crane, Mobile	85
Dozer	85
Forklift	85
Front-End Loader	80
Generator	82
Grader	85
Paver	85
Pneumatic Tools	85
Rock Drill	85
Roller	85
Scraper	85
Trucks	84
Water Pump	84
Welder	84

Source: DOT 2008, FTA 2018.
Notes: dBA = A-weighted decibels; Lmax = day-night average noise level.
All equipment fitted with a properly maintained and operational noise control device, per manufacturer specifications.

Potential effects associated with long-term noise sources were assessed based on project documentation, site reconnaissance data and reference noise level for the various noise sources.

Groundborne vibration impacts were qualitatively assessed based on existing reference documentation (e.g., vibration levels produced by specific construction equipment operations), through the application of Caltrans methodology outlined within the Transportation- and Construction- Induced Vibration Guidance Manual and the relative distance to potentially sensitive receptors from a given vibration source. Table 4.10-10 provides an overview of representative vibration levels for construction equipment.

Table 4.10-10. Representative Vibration Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)[1,3]	Approximate Lv (VdB) at 25 feet[2]
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (vibratory/ sonic)	Upper range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Heavy-duty Trucks (Loaded)		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: DOT 2006.
Notes:
1 Where PPV is the peak particle velocity.
2 Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
3 Vibration levels can be approximated at other locations and distances using the above reference levels and the following equation: PPVequip = PPVref (25/D)1.5 (in/sec); where "PPV ref" is the given value in the above table, "D" is the distance for the equipment to the new receiver in feet.

Traffic Noise Impact Assessment

The noise level at the project site resulting from major transportation sources must be evaluated for traffic volume and roadway configuration which could occur in the foreseeable future, across the life span of the project. Cumulative traffic volumes from the build-out year of the General Plan (2030) are frequently used to characterize future traffic noise exposure levels.

To assess the effect of project-generated traffic increases, traffic noise levels were modeled for roadway segments in the project vicinity based on the FHWA TNM 2.5 prediction methodologies (FHWA 2005).

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- 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 City's general plan or noise ordinance, or applicable standards of other agencies.
- Result in generation of excessive groundborne vibration or groundborne noise levels.
- 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, expose people residing or working in the project area to excessive noise levels.

For this analysis, short-term temporary noise levels generated by construction of the proposed project is evaluated against the City's Municipal Code Section 9.38.060.B, which limits the allowable operational time periods for construction equipment and establishes a sound level threshold of 83 dBA at a distance of 25 feet and 86 dBA at the property plane. Long-term or permanent noise levels are evaluated against the City's

General Plan maximum allowable noise levels (see Tables 4.10-7 and 4.10-8; as well as the Municipal Code property line thresholds). Permanent increases in ambient noise levels will be evaluated against the City's General Plan Policy N-1.4 significance criteria.

Threshold Significance Criteria not Applicable to the Proposed Project

Private Airstrip or Public Airport

The nearest public or public-use airport is Chico Municipal Airport. The project area is located approximately 5.3 miles south of the Chico Municipal Airport. The project area is also outside of the airport influence area (Butte County 2017) and is located more than two-miles from the airport. Ranchaero Airport is a privately owned aviation facility located in unincorporated Butte County southeast of the City and approximately 7 miles from the project site. Therefore, there is no potential to expose people in the project area to excessive airport-related noise, and this issue is not considered further.

Project Impacts

4.10-1 The proposed project could result in an increase in temporary or permanent ambient noise levels in excess of City standards.

Construction Noise

Construction associated with development of the land uses included within the VESP would generate noise associated with the operation of heavy construction equipment and construction related activities in the vicinity of the project area. Construction noise levels in the vicinity of the project area would fluctuate depending on the particular type, number, and duration of usage for the various pieces of equipment, as well as the relative exposure and distance between the source and receptors. As discussed in Section 7.7 of the VESP, development and implementation of the VESP would be conducted in phases generally beginning in the western portion of the project area, extending eastward depending on market demand and other economic forces (City of Chico 2020). It is not feasible to predict the exact timing or details of individual development projects within the VESP; however, development implemented during earlier phases would have the potential to expose on-site noise-sensitive receptors incorporated within those phases to construction noise levels associated with the later phases of project development.

The effects of construction noise depend largely on the types of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the vicinity of the receiver. Construction generally occurs in several discrete stages, with each stage varying the equipment mix and the associated noise. These stages alter the characteristics of the noise environment on the project site and in the surrounding community for the duration of construction.

The site preparation and grading stage typically generates the most substantial noise levels due to on-site equipment grading, compacting, and excavating activities, which often uses the loudest mix of construction equipment. Specific site preparation equipment can include backhoes, bulldozers, loaders; excavation equipment such as, graders and scrapers; and compaction equipment. Erection of larger structural elements and mechanical systems could require the use of a crane for placement and assembly tasks, which may also generate a substantial noise levels; which is likely to be limited to the development of commercial elements of the project. Due to the unique characteristics of the site that include underlying lava cap and hard bedrock on-site rock crushing may be required. Table 4.10-9 above lists the maximum noise levels typically generated by various types of construction equipment.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations (e.g., compressor or generator). Thus, it is necessary to determine the location of stationary sources during specific stages of construction, and the effective acoustical center of operations for mobile equipment during various stages of the construction process. The effective acoustical center is the idealized point from which the energy sum of all construction activity noise near and far would appear to originate. As one increases the distance between equipment and/or between areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of separate noise sources added together.

Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by periods of operation at lower power, idling, or powered-off conditions. These characteristics are accounted for through the application of typical usage factors (operational percentage) to the reference maximum noise levels presented in Table 4.10-9 above.

Although specific building design and construction requirements for buildout of the project components are currently unknown, it is anticipated that development of the various project elements would incorporate the use of typical construction sources such as backhoes, compressors, bulldozers, excavators, loaders and other related equipment. Based on the reference noise levels, usage rates, and operational characteristics discussed above, overall hourly average noise levels attributable to project construction activities were calculated and are provided in Table 4.10-12.

The City's Municipal Code Section 9.38.060.B addresses construction noise and states that individual pieces of construction equipment shall not exceed 83 dBA at a distance of 25 feet from the source, or 86 dBA at any point outside the project property plane, between the hours of 10 AM and 6 PM on Sundays and holidays or 7 AM to 9 PM other days. Between the dates of June 15 and September 15, the allowable construction operation hours are expanded to between 6 AM and 9 PM on days other than Sundays and holidays. In addition to the findings of the construction noise analysis, Table 4.10-11 includes the distance at which each of the construction stages would exceed the City's 83 dBA construction noise threshold.

Table 4.10-11. Construction Noise Model Results Summary

Construction Stage Noise Levels (dBA L_{eq}) at 50 feet				
Site Preparation	*Grading*	*Building Construction*	*Paving*	*Architectural Coating*
84.7dBA	85.9 dBA	85.5 dBA	86.5 dBA	76 dBA
Distance to City of Chico 83 dBA Noise Level Threshold				
60.5 feet	70 feet	67 feet	75 feet	22.5 feet

Source: Dudek 2020.
Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound level

As indicated in Table 4.10--11, based on the reference noise levels, usage rates, and operational characteristics discussed above, noise levels associated with individual pieces of construction equipment can range from 76 to 86.5 dBA Leq at a distance of 50 feet. Applying a typical sound attenuation rate for localized point sources (e.g., heavy construction equipment, mobile-source construction noise, stationary-

source construction noise) of 6 dB per doubling of distance between the noise source and the receptor, individual construction equipment noise levels would range from 85 to 92.5 dBA Leq at a distance of 25 feet. Therefore, construction noise levels would potentially exceed the City's Municipal Code threshold of 83 dBA at a distance of 25 feet for all phases of construction, with the exception of the architectural coating phase.

Specific tentative maps or site plans have not yet been developed for the various elements of the VESP. As such, the precise location of where construction activities would occur, in relation to both the off-site sensitive receptors and potential on-site receptors that may be present as subsequent phases of the project is developed is unknown. However, as shown in the VESP land use plan, there are landscaping setbacks, commercial areas and infrastructure elements that could be developed immediately adjacent to the project boundaries. Therefore, it is assumed that construction would occur immediately adjacent to the project boundary and could affect both off-site and on-site receptors. Based on the reference noise levels presented in **Error! Reference source not found.** and the calculated construction noise levels shown in Table 4.10-12, construction equipment noise levels would have the possibility to exceed the City's 86 dBA property line construction noise level threshold. Therefore, this impact would be considered **potentially significant**.

Long-Term/Operational Noise

Traffic Noise

The proposed project would result in the creation of additional vehicle trips on regional and local roadways (i.e., E. 20th Street, Skyway, Bruce Road), which could result in increased traffic noise levels at noise-sensitive land uses adjacent to area roadways. Potential off-site noise impacts resulting from the increase in vehicular traffic on the local roadway network, associated with long-term operations of the proposed project, were evaluated under Near-Term Future (2025) and Cumulative (2040) no Project and plus Project conditions. The Near-Term plus Project scenario assumes the build-out of the northern portion of the Plan area and is served by E. 20th Street.

Traffic volumes and the distribution of those volumes were obtained from the traffic consultant, Fehr & Peers (Fehr & Peers 2020). Average vehicle speeds on local area roadways were assumed to be consistent with posted speed limits and remain as such with or without implementation of the proposed project.

Table 4.10-12 summarizes modeled Ldn traffic noise levels at prediction receiver locations representing the outdoor activity areas of noise-sensitive land-uses adjacent to major roadway segments in the project vicinity. The table also presents the relative traffic noise level increase (net change) resulting from implementation of the proposed project factoring in the requirement that the southern project entrance is to be constructed after completion of the 450th multi-generational residential unit in the northern portion of the plan area along with an evaluation of relative significance. Actual traffic noise exposure levels at noise-sensitive receptors in the project vicinity would vary depending on a combination of factors such as variations in daily traffic volumes, relative distances between sources and receiver locations, shielding provided by existing and proposed structures, and meteorological conditions. Refer to Appendix I for modeling inputs and results.

Table 4.10-12. Predicted Near Term Future (2025) No Project and Plus Project Traffic Noise Levels

Roadway	Segment	Near Term (2025)	Near Term Plus Project	City Increase Threshold	Net Change	Impact?
Bruce Rd	S of Humboldt Rd	**68.1**	**68.4**	+5	<1	No
Bruce Rd	N of E 20th St.	**67.6**	**67.7**	+5	<1	No
E. 20th St	Dawncrest Dr.	59.7	63.4	+8	3.7	No
E. 20th St	W of Bruce	60.9	62.5	+8	1.6	No
E. 20th St	W of Notre Dame	**67.7**	**68.7**	+5	1.1	No
Notre Dame Blvd	S of E 20th St.	61.3	61.4	+8	<1	No
Skyway	E of Bruce Rd	62.7	62.7	+8	<1	No

Source: Dudek 2020.
Notes: dBA = A-weighted decibels; Ldn = Day/Night average noise level
Bold – Noise level exceeding City threshold for transportation noise levels at residential receptors.
* Traffic noise levels are predicted at prediction receiver locations representing the distance to the outdoor activity area of noise-sensitive land uses adjacent to major roadway segments in the project vicinity and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

As shown in Table 4.10-4.10-12, modeled traffic noise levels along roadway segments in the vicinity of the proposed project approach or exceed the maximum acceptable noise level threshold under the Near-Term Future (2025) conditions at a number of locations in the study area. Because of this and to further evaluate effects of the proposed project, the potential for the project to increase the ambient noise level in the project's vicinity is also analyzed. According to the City's General Plan Action N-1.4.1, impacts associated with roadway projects would be considered significant when they cause an increase of +8 dB from existing traffic noise levels that are less than 65 dB Ldn, +5 dB for existing traffic noise levels between 65 and 70 dB Ldn, and +3 dB for areas with existing traffic noise levels greater than 70 dB Ldn. While the proposed project is not directly a roadway improvement project, it is the only significant increase criteria presented within the City's General Plan or Municipal Code and is considered relevant guidance for traffic noise associated with the proposed project.

Near-Term Future (2025) traffic noise levels presented in Table 4.10-4.10-12 indicate that existing traffic noise levels in the project vicinity currently range from approximately 58 to 68 dBA Ldn at outdoor activity areas of sensitive receptors adjacent to area roadways, without the proposed project. Buildout of the proposed project under the Near-Term Future (2025) scenario is calculated to result in to small increases in the majority of the project study area, with an increase of 3.7 dB at the residences adjacent to East 20th Street, east of Bruce Road. Buildout of the northern portion of the project site is predicted to result in an increase in traffic noise levels less than the City's acceptable increase thresholds, and would not cause traffic noise levels to exceed the City's maximum allowable noise level threshold of 65 dBA Ldn. Therefore, the proposed project is anticipated to result in increases of traffic noise levels that would result in a **less-than-significant impact**.

Non-Transportation Noise

As discussed in Chapter 2, Project Description, the project is currently proposed to include the development of a variety of uses including residential, commercial, mixed-use, retail and public/quasi-public uses within the approximately 1,448-acre specific plan area. Future development would introduce new noise sources that could have the potential to create noise levels that exceed applicable City noise standards or result in

annoyance at existing and future noise-sensitive receptors within the plan area resulting in a **potentially significant impact**. It is not feasible to identify specific noise impacts associated with development at individual project sites. However, a general discussion and assessment of impacts is provided based on the possible types of land uses identified in the VESP.

Commercial Uses

The VESP proposes commercial development within the "Village Core" and the "Village Commercial". The Village Core is an approximate 13-acre area in the southwestern portion of the plan area that is proposed to include professional and medical office uses, neighborhood retail shops and services, restaurants and a "Community Clubhouse". The Village Commercial areas would cover approximately 44 acres surrounding the Village Core, with an additional Village Commercial area in the northern portion of the plan area near E. 20th Street. The Village Commercial portion of the project would provide a greater flexibility for building size, scale and land use type, to compliment and expand on the services provided within the Village Core.

Specific types of commercial uses that could be developed have not yet been determined and the potential sources of noise associated with these types of uses can vary substantially. Stationary noise sources associated with these operations can be periodic or continuous and may contain tonal components, which commonly result in annoyance at lower levels. Primary noise sources typically would include mechanical building equipment (e.g., HVAC), property maintenance, landscaping, parking lots, trash collection, on-site truck circulation, and commercial deliveries.

According to the EPA, noise attributable to mechanical building equipment has the potential to be a primary noise source associated with commercial or industrial uses. Equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms shielded from direct public exposure. Associated noise sources could take the form of fans, pumps, air compressors, chillers, generators, or cooling towers. Noise levels from HVAC equipment vary significantly depending on unit efficiency, size and location, but generally range from 45 dB to 78 dB Leq at a distance of 50 feet (EPA 1971), with typical duty cycles of 40% to 60%. Based on standard attenuation rate of 6 dB per doubling of distance for point sources, the operation of mechanical building equipment could result in the exposure of future noise-sensitive receptors within approximately 500 feet to noise levels that exceed the City's 50 dBA nighttime Leq noise standard. According to the project's land use plan, residential land uses including low density, medium density, and medium-high density residential would be located adjacent to Village Commercial uses; potentially exposing nearby noise-sensitive receptors.

Noise sources from the proposed commercial uses could also include occasional parking lot related noise (e.g., opening and closing of vehicle doors, people talking, tire squeal), commercial delivery activities (e.g., truck idling, use of forklifts, hydraulic lifts), trash compactors, and air compressors. Noise from such equipment can reach intermittent levels of approximately 90 dB at 50 feet from the source. Early morning truck deliveries also may be a source of elevated noise levels at nearby noise-sensitive receptors.

Overall, stationary source noise levels associated with commercial and retail operations in the plan area could potentially exceed the City's noise standards at nearby existing and future noise-sensitive receptors resulting in a **potentially significant impact.**

Parks and Elementary School

The VESP includes land set aside for future development of an elementary school, community, regional and neighborhood parks, public plazas (Village Core Park) and trails. The parks and elementary school would conceptually incorporate a variety of features, such as bicycle trailheads and trails, sporting fields/courts, dog parks and obstacle courses, children's playgrounds and climbing structures, concession stands, community centers and picnic areas. The Village Core Park conceptually incorporates a number of gathering areas, sporting activities, walking paths and trail access, and water features including a pool and ponds. The Village Core Park is also proposed to incorporate bandstand/amphitheater, a market, light retail/food & beverage options and business/professional office space.

Design details, such as specific locations, capacity, specific activity elements, site configuration and design are unknown. Residents and community members enjoying the outdoor activity areas, interacting and cheering produce a wide range of sound levels, depending on the activity and individual enthusiasm. Due to the variability of participants, the associated acoustic power and unpredictable nature of recreational behavior, quantitative calculation of noise levels associated with the outdoor recreational activities would be speculative. However, a qualitative discussion of outdoor recreation and events are discussed below. Parks trails, and other outdoor community activity can result in additional noise extending into the evening and nighttime hours associated with recreational activities. Noise sources commonly associated with these types of events include elevated voices from crowds, people recreating, exterior public address systems, and musical instruments. However, due to the intermittent nature of these noise sources, noise levels from these sources may be detectible at times, but would not be expected to largely effect the noise environment or result in annoyance.

The Village Core Park conceptually would play host to a farmer's market, art exhibits, craft shows, and other community events. Events such as food truck events, performances, entertainment events and other activities utilizing the project's bandstand may necessitate the use of amplified sound systems. Amplified sound systems typically employed at events such as, even with limited attendance, often employ sound systems capable of producing sound levels in excess of 90 dB at a distance of 100 feet. Depending on the design elements of the bandstand, the sound system employed and the exposure to nearby noise-sensitive uses, community events within the Village Core Park could have the potential to exceed the City's non-transportation noise thresholds resulting in a **potentially significant impact**.

Other Operational Stationary Noise Sources

Additional intermittent stationary noise attributable to the long-term operation of the commercial uses in the plan area may include landscape maintenance activities, garbage compaction and waste collection services, and people congregating and talking at various outdoor uses. Such noise-generating activities occur infrequently, are generally intermittent in nature, and consistent with other noise events occurring in the community making it infeasible to ascertain potential contributions to the noise environment. Additionally, these sources are expected to be less intensive than other project-related operational contributions such as parking, mechanical equipment, truck deliveries, and traffic. Therefore, these additional stationary noise sources would be predicted to comply with the City's 60 dBA Ldn exterior noise level standards and the impact would be **less than significant**.

Summary of Impacts

Based on the assumptions outlined within the impact analysis, implementation of the VESP has the potential to result in long-term operational and stationary-source noise levels that exceed the noise level standards outlined in the City's General Plan and Municipal Code resulting in a **potentially significant impact**.

Mitigation Measures

Incorporation of Mitigation Measure NOI-1 would ensure effective management of project noise levels and compliance with the City's construction noise level standards. Application of the noise control techniques affecting and controlling the construction noise at the source (i.e., heavy equipment, pumps) can obtain reductions of 3 to 6 dBA, while noise control techniques implemented along the path of the noise (i.e., temporary noise barriers, enclosures, relocation of equipment) have been shown to reduce construction noise levels between 2 to 7 dBA (Wu & Keller 2007). The overall noise level reduction achieved through implementation of Mitigation Measures is expected to range from 5 to 13 dBA. Compliance the elements making up this measure would ensure impacts from construction noise levels would be reduced to **less than significant.**

Compliance with Mitigation Measures NOI-2 through NOI-5 would ensure that existing and future noise-sensitive land uses in the project vicinity are not exposed to sound levels in excess of City noise thresholds. Mitigation Measure NOI-5 would limit unpermitted use of amplified sound equipment at the outdoor recreation and activity areas, protecting nearby noise-sensitive receptors from undue exposure to elevated sound levels that are not necessarily in line with the guidelines of the community. Compliance with these measures would ensure noise associated with project operation would be **less than significant**.

Construction

NOI-1: Construction Noise. The following measure shall be implemented by all construction contractors to reduce the effects of noise levels generated from construction activities.

- Construction operations and related activities within the project area shall be limited to the daytime construction noise thresholds outlined in the City of Chico Municipal Code Section 9.38.060. Construction shall be limited to the weekday hours of 7:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. For construction activity taking place between June 15th and September 15th, construction hours shall be limited to the weekday hours of 6:00 AM to 9:00 PM and the Sunday or holiday hours of 10:00 AM to 6:00 PM. The City of Chico shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception.
- All construction contracts shall include language stating that construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal combustion powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed manufacture specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function and minimization of noise.

- Portable and stationary site support equipment (such as generators, compressors, rock crushers, and cement mixers) shall be located more than 100 feet away, or as far as practicable from nearby noise-sensitive receptors.
- Impact tools (e.g., jackhammer, rock drill, hoe ram, etc.) employed at distances less than 100-feet from noise-sensitive receptors shall have the working area/impact area shrouded or shielded, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application specific noise shields or barriers.
- Construction equipment shall not be allowed to idle for extended periods (e.g., 15 minutes or longer) of time within 50 feet of noise-sensitive receptors.
- A disturbance coordinator shall be designated by each general contractor, which shall post contact information in a conspicuous location near the entrance of the construction site so that it is clearly visible to nearby receivers most likely to be disturbed. The coordinator shall manage complaints resulting from the construction noise. Reoccurring disturbances shall be evaluated by a qualified acoustical consultant retained by the project developer or contractor to ensure compliance with applicable standards.

Operation

NOI-2: **Operation Noise.** Future plans or tentative maps submitted for building and/or grading permits which incorporate potentially significant noise generating elements shall include an acoustical analysis (noise study) that verifies and demonstrates the use would meet applicable City noise standards. The analysis shall be provided to the City's Community Development Department for review. Projects determined to have the potential to generate or expose noise-sensitive uses to noise levels exceeding the City of Chico noise standards or result in a substantial (3 to 5 dB or greater) permanent increase in ambient noise levels shall incorporate noise-source control measures as specified in the acoustical analysis, such as site planning, silenced equipment, enclosures, or noise barriers.

NOI-3: **Operation Mechanical Noise.** Minimize mechanical noise levels of buildings constructed in the Village Core or Village Commercial areas through equipment selection, project-site design, and construction of localized barriers or parapets. Selection of mechanical equipment shall consider radiated outdoor sound pressure levels and efficiency as the primary criteria. Mechanical equipment shall be selected to provide compliance with the City's non-transportation noise level thresholds. Should the selection and placement of mechanical equipment that inherently complies with the City's criteria not be possible, localized noise barriers for equipment located at grade or rooftop parapets shall be constructed around the equipment so that line-of-site from the noise source to the property line of the adjacent noise-sensitive receptors is blocked. Where a noise barrier, parapet or intervening structure is required to achieve compliance, a noise analysis or compliance noise level monitoring shall be performed by a qualified acoustical consultant that demonstrates compliance with the City's non-transportation noise level thresholds subject to review and approval of the City's Community Development Director.

NOI-4: **Commercial Delivery Noise.** Loading, unloading and delivery areas of commercial uses within the Village Core and Village Commercial areas shall be located so that the buildings shield nearby noise-sensitive land uses from noise generated by loading docks and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise-sensitive uses. Loading dock activity and delivery truck activity at the commercial uses shall only occur during the daytime hours of 7 AM to 10 PM, in order to prevent evening and nighttime sleep disturbance at nearby noise-sensitive land uses, unless the operations can be demonstrated to be in compliance with the City's nighttime noise level thresholds. The City's Community Development Director or public works director may issue a permit exempting certain operations or activities from compliance with this measure at their discretion.

NOI-5: **Outdoor Recreation Noise.** Minimize excessive sound levels associated with outdoor recreation activities and community events at the Community Park and Village Core Park through application of project-site design and limitations on event capacity and allowable equipment and operational hours. Use of amplified sound systems in recreational areas adjacent to noise-sensitive receptors shall be limited to daytime hours (7 AM to 9 PM), with the exception of temporary use permits granted by the City's public works director (per City Code Section 9.38.080). The use of amplified sound systems, audible at a distance of 50-feet or more, shall be prohibited within the quasi-public and public use areas, without prior authorization.

4.10-2 The proposed project could result in excessive groundborne vibration or groundborne noise levels during construction.

Construction activities on the project site may result in varying degrees of temporary groundborne vibration or noise, depending on the specific construction equipment used and operations involved. Representative groundborne vibration levels for various types of construction equipment, developed by FTA, are summarized in the Table 4.10-10, above. Pile driving and blasting is not currently expected to be utilized in the construction of the elements of the proposed Specific Plan. As shown in 4.10-10, heavier pieces of construction equipment, such as a bulldozer that may be expected on the project site, have been documented to generate peak particle velocities of approximately 0.089 in./sec. PPV or less at a reference distance of 25 feet (DOT 2006).

Groundborne vibration attenuates rapidly, even over short distances. The attenuation of groundborne vibration as it propagates from source to receptor through intervening soils and rock strata can be estimated with expressions found in FTA and Caltrans guidance. It should be noted project construction activities would not include pile driving or other substantial sources of vibration. Using standard FTA vibration attenuation formulas, non-pile driving construction activities would exceed the FTA/Caltrans recommended threshold of significance of 0.2 in/sec. PPV at a distance of 15-feet or less. It is unlikely that heavy construction equipment would operate within 15 feet of any sensitive receptor, as buildings associated with the existing sensitive receptors are located approximately 20-feet or more from their respective property lines and project boundaries and construction areas.

It is notable that ground-borne vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA 2018). Additionally, the VESP does not include elements that would generate ground-borne vibration associated with the long-term operation. As such, no vibration-related impacts are identified at any of the nearest sensitive receptors to the project site during project construction and impacts are considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

Future development within the City of Chico, including the proposed project, would affect the future (cumulative) ambient noise environment. While it is difficult to project exactly how the ambient noise conditions within the area would change, it is known that traffic noise levels would increase due to the additional traffic generated by the proposed project and other development in the City and the region. In the cumulative scenario, ongoing development in the City of Chico and development in the County, would be expected to increase the ambient noise environment in the area as a result of increased traffic volumes, increased residential population and commercial activities.

The primary factor for the cumulative noise impact analysis is the consideration of future traffic volumes. Non-transportation noise sources (e.g., project operation) and construction noise impacts are typically project-specific and highly localized. Construction activities associated with anticipated development within the area would contribute temporarily to the noise levels in the cumulative (2040) ambient noise environment, but in a highly localized and transient manner. As other development occurs in the area, noise from different types of uses (e.g., traffic, aircraft, fixed noise sources) would continue to combine, albeit on a localized basis, to cause increases in overall background noise conditions within the area. As a result, such sources do not significantly contribute to cumulative noise impacts at distant locations and are not evaluated on a cumulative level.

4.10-3 The proposed project could contribute to an increase in cumulative traffic noise exposing project residents to increased noise and exceed City standards.

The TIA prepared for the VESP (see Appendix K) evaluated cumulative (2040) plus project traffic volumes and project trip generation rates. Under cumulative plus project conditions, traffic noise levels are predicted to range from approximately 63 to 72 dBA Ldn, as shown in Table 4.10-13. This would result in traffic noise levels exceeding the City's 65 dBA Ldn maximum allowable traffic noise threshold at four of the seven receptor locations, representing noise-sensitive outdoor activity areas adjacent to roadways in the project vicinity. The contribution of the proposed project to the cumulative plus project scenario would range from less than a 1 dB increase, to an increase of approximately 6.1 dB; which remains below the City's increase thresholds. However, based on the proposed project's contribution to the Cumulative plus Project noise environment, increases in traffic noise levels above the City's 65 dBA Ldn threshold would be attributable to the proposed project at one receptor location representing noise-sensitive receptors adjacent to East 20th Street. The impact at this location is 0.8 dB over the City's 65 dBA threshold resulting in an impact. Therefore, the project's contribution to the cumulative noise impact would be cumulatively considerable resulting in a **significant impact**.

Stationary noise sources associated with the proposed project would be subject to the City's Municipal Code; as such, stationary noise sources would not exceed the City's noise standards. Implementation of the proposed project in combination with past, present and reasonably foreseeable projects in the immediate vicinity would not result in additional cumulatively considerable noise, or ground-borne noise and vibration impacts. The project's contribution to ground-borne vibration and vibration impacts would be less than significant.

Table 4.10-13. Predicted Cumulative (2040) No Project and Cumulative Plus Project Traffic Noise Levels

Roadway	Segment	Cumulative (2040)	Cumulative Plus Project	City Increase Threshold	Net Change	Impact?
Bruce Rd	S of Humboldt Rd	**69.4**	**70**	+5	<1	No
Bruce Rd	N of E 20th St.	**69.2**	**69.7**	+5	<1	No
E. 20th St	Dawncrest Dr.	59.7	**65.8**	+8	6.1	**Yes**
E. 20th St	W of Bruce	64.0	65.0	+8	1.0	No
E. 20th St	W of Notre Dame	**70.2**	**71.8**	+5	1.6	No
Notre Dame Blvd	S of E 20th St.	63.0	63.1	+8	<1	No
Skyway	E of Bruce Rd	64.8	64.9	+8	<1	No

Source: Dudek 2020.
Notes: dBA = A-weighted decibels; Ldn = Day/Night average noise level
Bold – Noise level exceeding City threshold for transportation noise levels at residential receptors.
* Traffic noise levels are predicted at prediction receiver locations representing the distance to the outdoor activity area of noise-sensitive land uses adjacent to major roadway segments in the project vicinity and do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Mitigation Measures

Incorporation of Mitigation Measure NOI-6 would ensure that existing and future noise-sensitive land uses adjacent to the northern East 20th Street right-of-way, east of Bruce Road are not exposed to project generated transportation sound levels in excess of the City's 65 dBA L_{dn} transportation noise threshold. Mitigation Measure NOI-6 would require construction of a noise barrier or low noise pavement surface. Construction of a noise protection wall, at least 6-feet in height relative to the adjacent building pad, would break line of sight from the roadway to the sensitive receptors, resulting in a typical noise level reduction of 5 dB. Alternatively, paving and maintaining East 20th Street with "quiet pavement" would reduce traffic noise levels between 3 and 12 dB, as research has shown (Donavan et al 2020). Either of the noise control options, determined to be the most appropriate by the City would reduce the modeled traffic noise levels more than the approximate 1 dB reduction necessary for the proposed project to comply with City's 65 dBA L_{dn} transportation noise level threshold. Compliance with the mitigation measure would ensure the project's contribution to an increase in transportation noise associated with the project would result in a **less-than-significant cumulative impact**.

NOI-6: Project developer(s) shall fund and construct either a noise protection wall for existing off-site residences along E. 20th Street or a portion of E. 20th Street shall be repaved with quiet pavement prior to completion of 2,222 units or 80% of project completion. If selected, the alignment and design specifications for a noise protection wall shall be determined by input from a qualified acoustician, and is assumed to be a solid noise protection wall free from openings or gaps, with a minimum total surface density of 4 lbs/sq ft, and a minimum height of 6-feet relative to the adjacent building pad. Alternatively, a portion of E. 20th Street shall be repaved with "quiet pavement" (e.g., rubberized asphalt, open-graded asphalt, or whatever quiet pavement technology is available, etc.) between Potter Road to the west and Dawncrest Drive to the east. The timing and need for this mitigation measure may be re-assessed based on a future noise study conducted by a qualified acoustician and overseen by the Community Development Department after completion of 2,000 units. The details specific to funding the improvements shall be included in the Development Agreement.

4.10.4 References

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4.11 Public Services and Recreation

4.11.0 Introduction

This section describes the potential adverse physical impacts associated with the provision or need for new or physically altered governmental (police and fire stations, library facilities) or recreational facilities (parks) to meet acceptable response times, service ratios, or increase in usage of recreational facilities such that deterioration would occur from implementation of the Valley's Edge Specific Plan (proposed project or VESP).

Comments received in response to the Notice of Preparation (NOP) include concerns associated with the provision of new fire stations and first responder facilities, fire and police response times, available space at nearby preschools, middle schools, and high schools to accommodate new students from the project, and fees for recreational maintenance. A copy of the NOP and comments received are included in Appendix A.

Sources reviewed to prepare this section include the 2017 update to the Chico 2030 General Plan, Chico Area Recreation District (CARD)'s 2019 Parks and Recreation Master Plan (PRMP), Local Agency Formation Comission (LAFCo)'s 2018 City of Chico Municipal Services Review and information from the City of Chico, Butte County, Chico Unified School District (CUSD), and Chico Fire Department (CFD), including personal communication.

4.11.1 Environmental Setting

Police Protection

Police protection for the City of Chico (City) is provided by the City of Chico Police Department (CPD), with its main facility centrally located at 1460 Humboldt Road in the city (City of Chico 2016). CPD also has a Detective Annex located at 1500 Humboldt Road and a Crime Lab at 901 Fir Street, both adjacent to the main facility. A downtown substation located at 441 Main Street also provides workspace, materials, and restroom facilities for CPD (Butte LAFCO 2018). The CPD is a full-service police agency operating 24 hours a day, 7 days a week and staffed by over 140 full-time employees with an additional 100 police volunteers. CPD has primary law enforcement jurisdiction in the city and responds to all reports of criminal activities and emergencies. All police officers and dispatchers meet requirements set by the California Commission on Peace Officer Standards and Training (POST). Under the Chief of Police, there are two divisions in the Police Department: Operations Division and Support Division. The Operations Division consists of the Patrol Section and the Special Operations Section, encompassing outreach, traffic, and problem-oriented policing[1] efforts. The Support Division consists of the Criminal Investigations Section, Communications Section, Records Section, Property Section, and Crime Analysis. In response to a major emergency, the Chief of Police or highest ranking official on duty is able to activate the City's Emergency Management Plan, which provides a strategic response and assigns specific responsibilities to City employees in the event of a major disaster or other emergency event (CPD 2018).

For the last several years, there has been an increase in police officer retirements and officers leaving for employment at other agencies. During periods of particularly high recruitment and retention considerations, CPD focuses on "Priority 1" calls for violent crimes in action, while low-level quality of life crimes become less of a priority (Butte LAFCO 2018). Action S-5.1.2 in the City's General Plan states a goal to maintain adequate staffing to meet the needs of the community's service population.

[1] Problem-oriented policing is an analytic method used by police to identify and address the underlying conditions that lead to recurring crime problems in a community (NIJ 2014).

In the City's 2018 Municipal Service Review (MSR) prepared to evaluate expanding the City's Sphere of Influence, it was determined that CPD's facilities are generally in good condition and do not present capacity constraints for their operations. Their primary operational constraint, as described previously, is limited staffing levels due to program cuts. However, the MSR indicated that if the proposed staffing plan (see January 2017 City Council Agenda Report) of 13 additional police officers were to be implemented, then CPD facilities would not be adequate in size (Butte LAFCO 2018, City of Chico 2017b). The 13 additional officers are to be added to the Traffic Motors, School Resource Officers, Street Crimes, and Downtown Area/Park Bike teams. No additional officers are proposed for regular patrol staff (City of Chico 2017b).

The CPD maintains a mutual aid agreement with the Butte County Sheriff's Office. Under the terms of the mutual aid agreement, the Butte County Sheriff's Office can provide police enforcement within the city upon request (Butte County 2009). Additionally, the city is part of the California Disaster and Civil Defense Master Mutual Aid Agreement, which states that all resources and facilities of the state, including all political subdivisions, shall voluntarily aid and assist each other in the event of a disaster by the interchange of services, including police protection (CalOES 1950).

Fire Protection

The Chico Fire Department (CFD), also known as City of Chico Fire-Rescue, provides fire protection services and first responder life support for the city. CFD provides fire suppression, fire prevention, technical rescue, hazardous materials mitigation, first responder basic life support and advanced life support services. Total staffing of CFD consists of 51 full-time firefighters, 6 volunteer firefighters, 3 division chiefs, 1 fire chief, 1 fire inspector, 1 fire prevention officer, and 2 office staff (Wesley Metroka, pers. comm. 2020). CFD previously operated across six fire stations but stopped operating from Fire Station 3 and Fire Station 6 in March 2017 (CFD 2018). Fire Station 3, located at the Chico Municipal Airport is unstaffed, while Fire Station 6 is closed. While there are plans for a new Fire Station 6 at Eaton Road and Hicks Lane, there is currently no timeline for the project and plans are not expected to be finalized until sometime in the future (Wesley Metroka, pers. comm. 2020). Current operating stations include Fire Stations 1, 2, 4, and 5. Table 4.11-1 lists the existing fire stations in the city and their distance from the proposed project site.

Table 4.11-1. City of Chico Fire Stations

Station	Address/Location	Apparatus	Staffing	Distance from Project Site
1	842 Salem Street	Truck 1, Truck 1R (Reserve), 1 Air Utility Unit, 1 Rescue Trailer	1 Captain, 1 Engineer, 1 or 2 Firefighters per day	3.2 miles
2	182 East 5th Avenue	Engine 1, Engine 2, 1 Reserve Engine, 1 Utility Pickup Truck	1 Captain, 1 Engineer, 4 Firefighters per day	4.0 miles
4	2405 Notre Dame Boulevard	Engine 4, 1 4WD Type III Wildland Engine	1 Captain, 1 Engineer, 1 Firefighter per day	0.9 miles
5	1777 Manzanita Avenue	Engine 5, 1 4WD Type III Wildland Engine, 1 Type II Hazardous Materials Unit	1 Captain, 1 Engineer, 1 Firefighter per day	2.9 miles

Sources: City of Chico 2019a; Wesley Metroka, pers. comm. 2020; Google Earth.

Fire Station 4 located at 2405 Notre Dame Boulevard is the closest fire station to the project site, located less than one mile west. CFD crew staffed at Fire Station 4 are able to access the site quickly from Notre Dame Boulevard to Skyway Road. Fire Station 4 possesses a Type III Wildland Engine, specifically designed to fight fires in the urban-wildland interface (City of Chico 2019a).

Fire services in Chico are also supported by the North Division Battalion of the Butte County Fire Department. Battalion 4 includes the City of Chico, the community of Durham, portions of Butte Valley, and the surrounding foothills (Butte County 2013a). Station 41 sits within the northern area of Chico and includes Engine 41 and CAL FIRE Dozer Transport 2142 (Butte County 2018a). Station 41 is also administratively responsible for Volunteer Company 42, located centrally in North Chico. Station 44 is located in South Chico and includes Engine 44 and Rescue 44 and is administratively responsible for Volunteer Companies 26 and 27, both located near the eastern county boundary (Butte County 2018b).

The California Disaster and Civil Defense Master Mutual Aid Agreement states that all resources and facilities of the state, including all political subdivisions, shall voluntarily aid and assist each other in the event of a disaster by the interchange of services including fire protection (CalOES 1950). The Butte Emergency Command Center is the mutual aid coordination center for Butte County. They have the responsibility for coordinating all fire mutual aid requests in Butte County, and have the authority to directly obtain resources from neighboring counties including Yuba, Sutter, Plumas, Glenn, Colusa, Tehama, and Lassen (Butte County 2018c). The City is also signatory to the Chico Urban Area Fire and Rescue Agreement, which provides for the closest engine to respond to all emergencies, regardless of jurisdiction, within the designated service area (including areas outside the city's Sphere of Influence). The City has a mutual aid agreement with the California Department of Forestry and Fire Protection (CAL FIRE) in mutual threat zones, which are geographical areas on both sides of the political boundaries between the city and a State Responsibility Area (SRA), where a wildland fire would threaten both jurisdictions. (Butte LAFCO 2018).

A Community Risk Assessment and Standards of Response Coverage Study (SOC Report) was prepared by Fitch & Associates in 2017 to evaluate CFD operations and staffing. The SOC Report included a performance analysis and outlined recommendations for more adequate fire protection services in the city. In 2015, CFD responded to 10,738 requests for service citywide, 6,824 (63.6%) of which were emergency medical service (EMS) related calls, and 1,959 (18.2%) of which were and fire related calls. Fitch & Associates conducted an analysis of CFD's response performance utilizing two distinct measures: (1) the number of requests for services defined as either "dispatches" or "calls" (dispatches and calls represent the number of times a distinct incident was created involving CFD units, or calls in CFD's jurisdiction), (2) the number of "responses" representing the number of times an individual unit responded to a call. Fitch & Associates identified CFD's dispatch time, turnout time, travel time, and total response time in response to calls. Turnout time is the element of time measured between the time the fire department is alerted of the emergency and when the fire apparatus is en-route to the call. Travel time represents the time between when the fire apparatus is dispatched to the incident and arrival on-scene. The total response time is the cumulative time between when the request for service was answered and the arrival of fire apparatus on-scene. The SOC Report notes that performances vary across call types due to a variety of reasons. For example, turnout for fire-related calls may be longer because crews must dress in personal protective equipment before leaving the station, whereas EMS responders do not.

The SOC Report was completed in January 2017, two months before the closure of Fire Stations 3 and 6 in early March 2017. These closures were not anticipated in the SOC Report, and thus the analyses included in the Report are based on five and six-station configurations (Fire Station 3 was not included in all analyses because it was located at the Chico Municipal Airport and specifically designed to handle airport and aircraft-related emergencies).

Table 4.11-2 shows the average turnout and travel time by category. CFD evaluates response performance at the 90th percentile against established baselines and benchmarks, which are the minimum standards achieved and the standards hoped to achieve, respectively. The SOC Report recommended using a baseline response time of 8 minutes and 30 seconds and a benchmark response time of 6 minutes and 30 seconds.

Table 4.11-2. Average Turnout and Travel Time of First Arriving Units (in minutes)

Program	Dispatch Time	Turnout Time	Travel Time	Response Time
EMS	0.7	1.0	3.3	5.0
Fire	0.9	1.2	3.7	5.8
Rescue	1.0	0.9	4.2	6.1
Hazmat	1.1	1.2	3.7	5.9
Total	**0.7**	**1.1**	**3.4**	**5.2**

Source: Chico Fire Department 2017.

Table 4.11-3 shows the 90th percentile turnout and travel time of first arriving units by category:

Table 4.11-3. 90th Percentile Turnout and Travel Time of First Arriving Units (in minutes)

Program	Dispatch Time	Turnout Time	Travel Time	Response Time
EMS	1.3	1.9	5.1	7.2
Fire	1.7	2.2	6.0	8.4
Rescue	1.5	1.5	8.4	11.1
Hazmat	2.8	2.0	5.4	7.8
Total	**1.4**	**2.0**	**5.3**	**7.3**

Source: Chico Fire Department 2017.

As the SOC Report was completed in January 2017, two months before the closure of Fire Stations 3 and 6 in March 2017, these closures were not anticipated in the SOC Report. Table 4.11-4 shows the 90th percentile turnout and travel time of first arriving units in 2017 versus 2018 (measured after the closure of Fire Stations 3 and 6):

Table 4.11-4. 90th Percentile Response Time from All Incidents: 2017 vs. 2018

Time and Baseline/Benchmark	Dispatch Time	Turnout Time	Response Time and % Time Reached Baseline/Benchmarks
January – May 2017			
90th Percentile Time	1:36:00	2:19:00	7:29:00
SOC Benchmark (6 min 30 sec)	—	—	77.7%
Historical Baseline (7 min 30 sec)	—	—	90.0%
SOC Baseline (8 min 30 sec)	—	—	90.9%
January – May 2018 (After Closure of Fire Stations 3 and 6)			
90th Percentile Time	1:50:00	2:18:00	8:20:00
SOC Benchmark (6 min 30 sec)	—	—	68.7%
Historical Baseline (7 min 30 sec)	—	—	80.0%

Table 4.11-4. 90th Percentile Response Time from All Incidents: 2017 vs. 2018

Time and Baseline/Benchmark	Dispatch Time	Turnout Time	Response Time and % Time Reached Baseline/Benchmarks
SOC Baseline (8 min 30 sec)	—	—	90.0%
90th Percentile Difference (2017 vs. 2018: January-May)			*+00:51*

Source: Chico Fire Department 2018.

As shown in Table 4.11-4, CFD reached its SOC benchmark response time 68.7% of the time in 2018. CFD indicated that fire station closures were a primary cause of the decrease in response times. Additionally, in the first half of 2018, Station 1 experienced a nearly 5% increase in the number of overlapping calls. Overlapping incidents contribute to increased response times, as units from other parts of the city or from the California Department of Forestry and Fire Protection (CALFIRE) are called on to respond to the request for service.

The 2018 MSR states that Fire Stations 1 and 2 do not meet present standards for essential services buildings. Fire Stations 1 and 2 were built in 1962 and have not been upgraded or significantly remodeled since that time. If found necessary, acquisition and/or construction of fire facilities or improvements to existing facilities would be funded by development impact fees.

Schools

The City is served by the Chico Unified School District (CUSD), which serves students from preschool to 12th grade. CUSD encompasses 26 schools and includes unique programs such as community day school, independent study program, special services, and an online academy (CUSD 2018a). CUSD includes 12 elementary schools, 3 middle schools, and 2 high schools as well as additional schools providing special services, independent study, and online learning, among other services. The 2018-2019 enrollment and projected 2028-2029 enrollment of these schools is shown in Table 4.11-5. Currently, the only school that is over its maximum capacity is Chapman Elementary. In 2028-2029, Chapman Elementary, Shasta Elementary, and Emma Wilson Elementary are expected to have enrollments in excess of capacity even after completion of all the projects envisioned within the 2019 Facilities Master Plan Update. To accommodate excess capacity, CUSD uses portable classrooms and allows use of other school rooms (ex. multipurpose rooms) as classrooms. However, district-wide capacity would be able to accommodate 1,263 elementary school students, 1,185 middle school students, and 1,756 high school students in the present. After improvements planned under the 2019 Facilities Master Plan Update, district-wide capacity in 2028-2029 would be able to accommodate 1,203 elementary school students, 697 middle school students, and 459 high school students. In addition to the existing schools, CUSD owns two undeveloped school sites within the City. The 2019 Facilities Master Plan Update also considered the increase in student population resulting from displacement of students from the Town of Paradise due to the 2018 Camp Fire. After the Camp Fire, CUSD had a net gain of 229 students (CUSD 2019). These student enrollment increases were reflected in the CUSD's estimates when developing the 2019 Facilities Master Plan Update.

The closest schools to the project site are Little Chico Creek Elementary School and Marsh Junior High School, located approximately 1.4 and 1.5 miles, respectively, northwest of the proposed East 20th Street entrance to the VESP area. Both of these schools are not at maximum capacity and are not envisioned to be at maximum capacity in 2028-2029, even in the absence of planned improvements under the 2019 Facilities Master Plan.

Table 4.11-5. CUSD School Enrollment and Capacity

School	Location	Enrollment (2018-2019)	Projected 2028-2029 Enrollment	Existing Maximum Capacity	2019 Facilities Master Plan Maximum Capacity
Elementary Schools					
Chapman Elementary	1071 East 16th Street	330	362	318	318
Citrus Avenue Elementary	1350 Citrus Avenue	314	355	426	372
Emma Wilson Elementary	1530 West Eighth Avenue	630	724	723	723
Hooker Oak Elementary School	1238 Arbutus Avenue	369	375	453	480
Little Chico Creek Elementary	2090 Amanda Way	449	526	591	699
Marigold Elementary	2446 Marigold Avenue	448	450	618	618
McManus (John A.) Elementary	988 East Avenue	426	455	691	691
Neal Dow Elementary	1420 Neal Dow Avenue	332	337	537	537
Parkview Elementary	1770 East Eighth Street	362	362	477	477
Rosedale Elementary	100 Oak Street	542	559	612	720
Shasta Elementary	169 Leora Court	629	651	645	645
Sierra View Elementary	1598 Hooker Oak Avenue	563	560	585	639
	Total	**5,413**	**5,716**	**6,676**	**6,919**
Middle Schools					
Bidwell Junior High	2376 North Avenue	978	1,117	1,301	1,301
Chico Junior High	208 Memorial Way	878	1,064	1,360	1,360
Marsh (Harry M.) Junior High	2253 Humboldt Road	874	1,037	1,254	1,254
	Total	**2,730**	**3,218**	**3,915**	**3,915**
High Schools					
Chico High School	901 Esplanade	1,740	2,065	2,638	2,524
Pleasant Valley High School	1475 East Avenue	1,971	2,499	2,829	3,058
	Total	**3,711**	**4,564**	**5,467**	**5,582**

Source: Chico Unified School District 2019 Facilities Master Plan Update.

Local and Regional Parks

The City and the Chico Area Recreation and Parks District (CARD) work together to plan, develop, and manage park and community use facilities within the city. The City's 2030 General Plan states that growth within the city and its surrounding areas has increased the use of existing parks and has increased demand for additional recreational facilities. In 2019, CARD updated their Park and Recreation Master Plan (PRMP) to provide guidance for Chico area parks and recreation, with consideration to existing and future parkland needs. The plan contains a detailed inventory of all parklands within the city, assesses the condition of parks and recreation facilities, and determines community needs and potential opportunities for development projects.

The largest park within the city is Bidwell Park, established in 1905. The park originally spanned 2,500 acres, but additional land purchases by the City have resulted in a park encompassing 3,670 acres. The park is nearly 11 miles in length and has a large variety of terrain and landforms. The lower part of the park is flat, while the upper park is located in the mountainous foothills of the Sierra Nevada. Bidwell Park caters to a variety of recreational activities, including swimming, hiking, and mountain biking (City of Chico 2009). Upper Bidwell Park and portions of Lower Bidwell Park are not considered in calculating and setting the level of service for each of the below classifications. However, Bidwell Park includes various neighborhood and community parks, including Hooker Oak Park, Wildwood Park, and the Chico Creek Nature Center, which are included in the park inventory for determining the current level of service (CARD 2019).

The closest park to the project site is Baroni Park, located approximately 0.6 of a mile northwest of the proposed East 20th Street entrance.

The different types of parklands in the city are described below:

Neighborhood Parks

Neighborhood parks provide recreation opportunities within a half mile of residential areas and typically include play fields, paved areas for court games (e.g. basketball), Americans with Disabilities (ADA) accessible walkways, sitting areas, and shaded picnic areas. According to CARD, the desirable acreage for a neighborhood park is between 5 and 10 acres, with a desired level of service of 1.5 acres per 1,000 residents. If adjacent to other parkland, natural areas, schools, or greenways, a smaller acreage may be acceptable. As of the April 2019 Update of the PRMP, there were 13 neighborhood parks in the city and the existing level of service was 0.36 acre of neighborhood parks per 1,000 residents, as shown in Table 4.11-6.

Table 4.11-6. Neighborhood Parks in the City of Chico

Site Name	Acres
Baroni Park	7.30[1]
Hancock Park	3.80
Nob Hill Park/Hussa Ranch Park	2.90
Oak Way Park	7.90
Peterson Park	4.10
Rotary Park (Mini)	0.30
Caper Acres	3.50
Humboldt Road Site[2]	3.00
Ceres Avenue	5.00[1]

Table 4.11-6. Neighborhood Parks in the City of Chico

Site Name	Acres
Depot Park	2.00
Children's Park	3.70
Alamo/Henshaw	5.50[1]
Emerson Park	1.44
Total Developed Acres	**37.84**
Total	**50.44**

Source: CARD 2019.
Notes:
1 Undeveloped acreage totals 12.6.
2 City established this as passive Open Space.

Community Parks

Community parks provide opportunities for community-wide activities and facilities, with a balance between sports facilities/fields and community activity areas (e.g., gardens, water features, and performance areas). Portions of the site should be relatively flat to accommodate these fields and facilities. Access to a community trail system is also desirable. According to CARD, the desirable acreage for a community park is between 25 and 50 or more acres, with a desired level of service of 2.5 acres per 1,000 residents. As of the April 2019 Update of the PRMP, there were six community parks serving the city and the existing level of service was 1.47 acres of neighborhood parks per 1,000 residents, as shown in Table 4.11-7.

Table 4.11-7. Community Parks in the City of Chico

Site Name	Acres
Community Park	40
Hooker Oak Park[1]	35
Wildwood Park	30.30
Humboldt Skate Park	3.8
DeGarmo Park[2]	36
1 Mile Recreation Area	23
Total Developed Acres	**154.10**
Total	**168.10**

Source: CARD 2019.
Notes:
1 CARD leases the property from the City of Chico.
2 Undeveloped acreage totals 14.

Natural Areas, Corridors, and Greenways

The City owns and maintains several natural areas, corridors, and greenways. These properties are not developed and do not have any formalized recreation areas, although most are open for public access. The existing level of service meets the desired level of service of 2.5 acres per 1,000 residents. Table 4.11-8 lists all the natural areas, corridors and greenways in the city.

Table 4.11-8. Natural Areas, Corridors, and Greenways in the City of Chico

Site Name	Acres
First Avenue and Verbena Site	16.4
Lindo Channel	150.0
North Chico Bike Path	10.0
Little Chico Creek	22.5
Mudd/Sycamore Creek	6.0
Comanche	22.06
Tiechert Pond	38.76
Total	**265.32**

Source: CARD 2019.

Special Purpose Parks

Special purpose parks are intended to serve a more focused purpose or community need. These include festival areas, fair grounds, dog parks, and horticulture centers. Because these parks vary greatly in service and nature, they do not have defined or ideal characteristics, and do not have an identified level of service.

Other Recreational Resources

Other recreational facilities and resources include the CARD Community Center, Lakeside Pavilion, Pleasant Valley Recreation Pool and Recreation Center, Chico Creek Nature Center, and Dorothy F. Johnson Center used for a variety of recreational programming, and the Pleasant Valley Recreation Center and Pool primarily used for after-school programs and youth camps. CARD also uses CUSD facilities to host its after-school programs and sports programs (CARD 2019). Bidwell Park also includes swimming facilities, such as the Sycamore Pool and Hooker Oak established swimming areas, and all portions of Big Chico Creek commonly used for swimming, bathing, or playing (Chico Municipal Code, Section 12R.20.010).

4.11.2 Regulatory Setting

Federal Regulations

There are no federal regulations related to public services or recreation that are relevant to the proposed project.

State Regulations

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment” the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

Emergency Response/Evacuation Plans

The state of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Fire Code

California Code of Regulations, Title 24, Part 9, incorporates adoption of the 2015 International Fire Code of the International Code Council with necessary California amendments. The California Fire Code and Office of the State Fire Marshal provides regulations and guidance for local agencies in the development and enforcement of fire safety standards. The California Fire Code also establishes minimum requirements that would provide a reasonable degree of safety from fire, panic, and explosion. The California Fire Code applies to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure within the State of California. The California Fire Code includes a mandate for automatic sprinkler systems in new buildings and structures, including floors of buildings where the fire area exceeds 5,000 square feet, has an occupant load of 100 or more, or is located on a floor other than the level of exit discharge[2] (Cal. Code Regs. tit. 24 Part 9).

California Education Code

The California Code of Regulations (CCR), Title 5, Education Code governs all aspects of education within the state. The California Education Code authorizes the California Department of Education (CDE) to develop site selection standards for school districts which require districts to select a site that conforms to certain net acreage requirements established in the CDE's 2000 School Site Analysis and Development guidebook. The guide includes the assumption that the land purchased for school sites will be in a ratio of approximately 2:1 between the developed grounds and the building area. If the "availability of land is scarce and real estate prices are exorbitant," the site size may be reduced. CDE policy states that if a school site is less than the recommended acreage required, the district shall demonstrate how the students will be provided an adequate educational program, including physical education, as described in the district's adopted course of study. Through careful planning, a reduced project area school site could follow the recent trend of school downsizing and meet the CDE's criteria.

Leroy F. Greene School Facilities Act

According to California Government Code, a qualified agency, such as a local school district, may impose fees on new residential and commercial construction to compensate for the impact that a project will have on existing school facilities or services. The California Legislature passed Senate Bill (SB) 50 in 1998 to insert new language into Government Code sections 65995.5-65985.7, which authorized school districts to impose fees on new residential and commercial construction in excess of mitigation fees authorized by Government Code Section 66000. School districts must meet a list of specific criteria, including the completion and annual update of a School Facility Needs Analysis, in order to impose additional fees under the Government Code. Under the terms of this statute, payment of statutory fees is considered to mitigate in full for the purposes of CEQA any impacts to school facilities associated with a qualifying project. The fees

[2] Exit discharge refers to the part of the exit route that leads directly outside.

are assessed based upon the proposed square footage of the new or expanded residential or commercial development. Currently, the fees are $3.79 per square foot of residential space and $0.61 per square foot of commercial space (CUSD 2018b).

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) created the School Facility Program where eligible school districts may obtain state bond funds. State funding requires matching local funds that generally come from developer fees. The passage of SB 50 eliminated the ability of cities and counties to require full mitigation of school impacts and replaced it with the ability for school districts to assess fees directly to offset the costs associated with increasing school capacity as a result of new development. The old "Stirling" fees were incorporated into SB 50 and are referred to as Level 1 fees. These fees are currently capped at $3.79 per square foot for new residential development and $0.61 per square foot for commercial and industrial (nonresidential) development and age-restricted senior housing. Districts meeting certain criteria may collect Level 2 fees as an alternative to Level 1 fees. Level 2 fees are calculated under a formula in SB 50. Level 3 fees are approximately double Level 2 fees and are implemented only when the State Allocation Board is not apportioning state bond funds. The passage of Proposition 1D on November 7, 2006, precludes the implementation of Level 3 fees for the foreseeable future. Although SB 50 states that payment of developer fees are "deemed to be complete and full mitigation" of the impacts of new development, fees and state funding do not necessarily fully fund new school facilities. Chico Unified School District currently levies development impact fees on development within the district's boundaries consistent with SB 50. Currently, the fees are $3.79 per square foot of residential space and $0.61 per square foot of commercial space (CUSD 2018b).

California Government Code Section 66477 (The Quimby Act)

Cities and counties have been authorized since the passage of the 1975 Quimby Act (California Government Code, Section 66477) to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The goal of the Quimby Act is to require developers to help mitigate the impacts of property improvements. The Quimby Act preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances that require private developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or a combination of the two. Originally, the Quimby Act was designed to ensure "adequate" open space acreage in jurisdictions adopting Quimby Act standards (i.e., 3 to 5 acres per 1,000 residents). The Act requires that standards for recreational facilities be adopted in the local general plan recreation element if a parkland dedication/fee ordinance is to be enacted. The City of Chico has established through its General Plan (consistent with the PRMP) a standard of 1.5 acres of neighborhood parkland, 2.5 acres of community parkland, and 2.5 acres of greenways per 1,000 residents.

Local Regulations

The following local regulations pertaining to public services and recreation would apply to the proposed project.

City of Chico 2030 General Plan

The City's 2030 General Plan provides goals, policies, and actions regarding public services and recreation, including the following (City of Chico 2017a):

Safety Element

Goal S-4: Continue to provide effective and efficient fire protection and prevention services to Chico area residents.

Policy S-4.1 (Fire Safety Staffing) – Maintain adequate fire suppression and prevention staffing levels.

Action S-4.1.1 (Fire Response Time) – Strive to obtain an initial response time of five and a half minutes or less for at least 90 percent of fire emergency response calls in urbanized areas.

Policy S-4.2 (Interagency Coordination) – Continue to maintain interagency relationships to maximize fire protection services and support programs that reduce fire hazards.

Action S-4.2.1 (Interagency Programs) – Continue to work with CalFire and the Butte County Fire Department on programs that will enhance fire protection and firefighting capabilities in the Planning area, including maintaining aid agreements.

Policy S-4.3 (Fire Safety Standards and Programs) – Support the development and implementation of standards and programs to reduce fire hazards and review development and building applications for opportunities to ensure compliance with relevant codes.

Action S-4.3.1 (Standards to Protect Structures) – Maintain, and update as needed, the standards manual for protecting structures in wildland fire areas.

Action S-4.3.2 (Structural Standards) – Incorporate building construction standards for the Local Resource Area (areas which are provided City fire suppression services that are consistent with the requirements for the State Responsibility Areas (areas that are provided State and County fire suppression services) designated as Very High, High, and Moderate Fire Hazard Severity Zones.

Action S-4.3.3 (Project Design) – As part of the project review process in wildland fire areas, require consideration of emergency evacuation routes and defensible buffer areas.

Action S-4.3.4 (Development Standards) – Encourage the County to require development in unincorporated areas within the City's Sphere of Influence to conform to the City's development standards.

Action S-4.3.5 (Fire Sprinklers, New Structures) – Consider adoption of a new ordinance that exceeds state standards requiring automatic fire sprinklers in new non-residential construction.

Policy S-4.4 (Vegetation Management) – Support vegetation management and weed abatement programs that reduce fire hazards.

Goal S-5: Provide a safe, secure environment with responsive police services for the community.

Policy S-5.1 (Police Services) – Continue to provide fundamental police services based upon rapid response to emergencies and response, control and intervention in conduct that threatens life and property.

Action S-5.1.2 (Police Staffing) – Maintain adequate staffing to meet the needs of the community's service population.

Policy S-5.2 (Public Confidence in Police) – Maintain and increase public confidence in the ability of the Police Department to provide quality police services.

Policy S-5.3 (Community Policing) – Reduce crime by strengthening police/community partnerships and providing community-oriented policing services that are responsive to citizens' needs.

Action S-5.3.1 (Neighborhood-Based Programs) – Enhance neighborhood-based crime prevention activities, such as Neighborhood Watch, Town and Gown activities, and community education programs.

Policy S-5.4 (Collaboration and Coordination) – Maintain strong relationships with local and state law enforcement agencies, and participate in joint disaster preparedness planning.

Action S-5.4.1 (University Police) – Maintain a memorandum of understanding with CSU, Chico University Police to coordinate law enforcement duties and services in the neighborhoods near the campus, such as the South Campus District.

Action S-5.4.2 (Butte County Sheriff's Department) – Strive to maintain the mutual aid agreement, and continue cooperative policing in the greater Chico area with the Butte County Sheriff's Department.

Action S-5.4.3 (Disaster Planning) – Through the Butte County Office of Emergency Services, participate with area public safety and health agencies to plan and train for disaster preparedness.

Policy S-5.5 (Design to Deter Crime) – Support the deterrence of crime through site planning and community design.

Action S-5.5.1 (Crime Deterring Design) – Consider the incorporation of design features such as strategic window placement, lighting techniques, and landscaping into development projects to discourage criminal activity.

Parks, Public Facilities, and Services Element

Goal PPFS-1: Continue cooperative efforts with the Chico Area Recreation and Park District and the Chico Unified School District to provide a broad range of high quality parks and recreation facilities and services for all residents.

Policy PPFS-1.1 (Parks and Recreation Facilities) – Partner with CARD and local providers to provide parks and recreation facilities that offer recreation opportunities for the community.

Action PPFS-1.1.1 (CARD Leadership) – Convey properties and funding mechanism to the Chico Area Recreation and Parks District (CARD) for operation, maintenance and programming of parks identified in the City of Chico/CARD Memorandum of Intergovernmental Cooperation, Coordination, and Understanding.

Action PPFS-1.1.2 (Park Development Fees) – Adopt park development fees that support the goals of the CARD Parks and Recreation Master Plan to fund the acquisition and development of neighborhood and community parks, and community use facilities, such as an aquatic park, needed as a result of new development.

Action PPFS-1.1.3 (Cooperative Development of Facilities) – Pursue cooperative development of neighborhood, community, and regional parks, as well as facilities that enhance recreational opportunities and economic development, such as sports and aquatic complexes, with the Chico Area Recreation and Parks District.

Action PPFS-1.1.4 (Park Maintenance Funding) – Aid in the formation of maintenance districts or other funding mechanisms to pay for the cost of ongoing maintenance and operation of parks.

Action PPFS-1.1.5 (CARD Review of City Projects) – Solicit comments from Chico Area Recreation and Parks District staff as part of early project review for Special Planning Areas and larger subdivision proposals.

Action PPFS-1.1.6 (Multiple Use of School Facilities) – Encourage the Chico Unified School District, CSU Chico, Butte College, and the Chico Area Recreation and Parks District to coordinate the joint use of school facilities for community recreation and other public purposes.

Goal PPFS-2: Utilize creeks, greenways and preserves as a framework for a system of open space.

Policy PPFS-2.1 (Use of Creeks and Greenways) – Utilize the City's creeks, greenways and other open spaces for public access, habitat protection, and to enhance community connectivity.

Action PPFS-2.1.2 (Creekside Design) – Continue to use Chico's Design Guidelines Manual for proposed development adjacent to creeks to address setbacks, building orientation, security measures, and lighting to promote public access and use of the City's creeks as amenities without detracting from the natural setting.

Action PPFS-2.1.3 (Pathway and Trail Planning) – Design pedestrian and bicycle paths and trails adjacent to and across creeks that protect the riparian environment.

Action PPFS-2.1.4 (Assess Potential Impacts to Creeks) – Through the development and environmental review process, including consultation with state and federal agencies and non-profit organizations, ensure that natural areas and habitat located in and adjacent to the City's creeks are protected and enhanced.

Goal PPFS-3: Support efforts by Chico Unified School District, CSU Chico, Butte College and private educational institutions to maintain and improve educational facilities and services in the City.

Policy PPFS-3.1 (CUSD Coordination) – Support Chico Unified School District's efforts to provide school sites and facilities that meet the educational needs of the community.

Action PPFS-3.1.1 (School Sites) – Encourage Chico Unified School District to:

- Locate schools to serve new neighborhoods.
- Locate school sites safely away from heavy traffic, excessive noise, and incompatible land uses.

- Locate schools in areas where existing or planned circulation infrastructure allows for safe access.
- Promote safe student loading and unloading.
- Promote walking, biking, riding transit, or carpooling to schools.

Action PPFS-3.1.2 (Plan for School Sites) – Consult with Chico Unified School District staff when planning the Special Planning Areas to ensure that school facilities are in place to meet the needs of development.

Action PPFS-3.1.3 (School Information) – Provide information to developers and interested parties on school locations and school facility fees during the City's project review process.

CARD Parks and Recreation Master Plan (PRMP)

The 2019 CARD PRMP reviews and updates the recommendations of the previous 2008 PRMP based on current and future parkland needs. The specific elements of the plan include development of an inventory of all parklands in the city, identification of level of service and opportunity for future improvement, determination of community recreation needs through discussion with user groups and through public meetings, and identification of future redevelopment areas and potential financing sources. The 2019 PRMP specifically identifies immediate, short-term goals to be the highest priority over the next two to five years. To address current facility deficits, CARD recommends new multi-use fields, an aquatics facility, gymnasium, and community center as the highest priorities (CARD 2019). CARD would work with the developer of the proposed project to credit fees where possible based on the current park development requirements and park fees (pers. comm. Ann Willman 2020).

Chico Municipal Code

The Chico Municipal Code includes various chapters related to the provision and maintenance of public services and recreation.

Chapter 2.20 establishes the fire department, including its function and organization. Functions include protecting life and property through prevention and elimination of fire hazards, enforcing laws related to the preventing and extinguishing of fires and handling of potentially dangerous combustibles and explosives, investigation of criminal-related fires, recruiting and training of personnel, and any other duties as directed by the city manager.

Chapter 16.42 contains the general provisions of fire regulations to safeguard life and property from the hazards of fire and explosion, including conduction of inspections and issuance of permits.

Chapter 16R.42 establishes fire regulation standards, governing the improvement, alteration, occupation or maintenance of any premises, and the regulation of non-building standards activities in all structures, facilities, premises, and occupancies for the prevention of fire and/or for the protection of life and property against fire.

Chapter 2.28 establishes the police department, including its function and organization. This chapter mandates that all police officers must adhere to standards established by the California Commission on Peace Officer Standards and Training.

Chapter 12.04 includes the general provision of City parks and playgrounds, including Bidwell Park, Children's Playground, Depot Park, and Plaza Park. Chapter 3.85 defines development impact fees in the City. Article V of Chapter 3.85 establishes park facility fees and addresses the imposition, payment, and exemptions to park facility fees. A park facility fee is assessed and levied upon the owners of residential property located in the city during the following scenarios: construction of a new building on the property containing one or more dwelling units; construction of alterations or additions to an existing building on the property adding one or more dwelling units; or change in use of an existing building on the property from a nonresidential use to a residential use.

The amount of the park facility fee is established by resolution of the city council and shall be equal to the sum of a basic park facility fee and a Bidwell Park land acquisition fee determined and calculated from the most current version of the Development Impact Fee Program fee schedule. Currently, the established park facility fees are $4,266 per residential dwelling unit while the Bidwell Park land acquisition fee is $77 per dwelling unit (City of Chico 2019b).

City of Chico Emergency Operations Plan

Butte County has adopted a multi-jurisdictional Emergency Operations Plan (EOP), which assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The intent of the EOP is to provide direction on how to mobilize and respond to an emergency from onset to recovery. This plan is an extension of the Butte County Emergency Operations Plan and the California State Emergency Plan and is reviewed and tested periodically and revised as necessary to meet changing conditions. Through an integrated framework of emergency plans and procedures, the City of Chico, State of California and Federal Government will promote effective planning and coordination prior to an emergency, thereby ensuring a more effective response and recovery. As part of the EOP, the CPD is primarily responsible for law enforcement, evacuation, animal care, and alert and warning, with supporting roles in management, public information, and situation status. The CFD is primarily responsible for action planning, fire and rescue, hazardous materials, and medical/health, with supporting roles in alerting and warning, management, public information, and situation status (Butte County 2011).

Valley's Edge Specific Plan

The VESP provides goals, policies, and actions regarding parks and recreation. These policies and actions would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Goals and Principles

Section 2.3.1 Chapter 3: Parks, Recreation, and Open Space

Goal PROS-1: Consider Open Space First: Allow the site's natural form and character to inform all subsequent planning, and where practicable utilize open space to advance the VESP's Guiding Principles, Goals and Actions, and applicable Goals, Policies and Actions expressed in the Chico General Plan.

> **Action PROS-1.1** – Prioritize open space and recreation within the planning area by ensuring that no less than 675 acres of open space is provided.

Goal PROS-2: Framework of Permanent Open Space: Establish a framework of permanent open space that preserves sensitive habitat, respects natural features and landforms, visually and physically buffers development, forms lasting growth barriers, and utilizes natural landscapes to define and transition the edges of the built environment.

Goal PROS-3: Promote Outdoor Recreation & Compliment Bidwell Park: Promote outdoor recreation by creating space and facilities which foster play, exercise, adventure, and social interaction. Strive to compliment Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

Action PROS-3.1 – Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.

Action PROS-3.2 – Master plan parks, trails and other recreational facilities to promote active, passive, inclusive, family and intergenerational outdoor experiences. Create spaces for people to gather, socialize and interact, such as community gardens, community clubhouse(s), parks, ponds, and picnic areas, as well as naturalized in-route destinations such as play-pockets along the trail network, and rest areas along creek corridors.

Action PROS-3.3 – Deliberately plan parks, playgrounds and other open space elements to bring nature back into people's lives, not only to foster children's play, but also to promote intergenerational play.

Action PROS-3.4 – Cooperate with Chico Area Recreation District (CARD) and Chico Unified School District (CUSD) in the planning of joint use public facilities to serve the community's anticipated need for quality recreational and educational facilities.

Action PROS-3.5 – Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan area are within 350 yards of a park, trail, or open space element.

Action PROS-3.6 – Identify suitable land along the plan area's western boundary to accommodate a small lake for recreational purposes, located so as to enhance foreground views and encourage pedestrian, bike usage, while still accommodating vehicular access and parking.

Action PROS-3.7 – Make an irrevocable offer to donate no less than 370-acres of dedicated open space to the City of Chico as a Regional Park and preserve, and provide a means and mechanism to manage its use until such time as the land donation is accepted.

Action PROS-3.8 – Create and maintain no less than 20 miles of open space biking, hiking and multi-use trails for recreation, play, exercise, and non-motorized transit.

Section 2.3.6 Appendix A: Design Guidelines

Goal DES-1: Implement Crime Prevention through Environmental Design (CPTED)**.** Implement CPTED strategies to ensure an attractive, safe and livable community that reduces the potential for and occurrence of crime.

Action DES-1.1 – Increase visibility by locating windows to overlook public spaces and parks, by installation of appropriate lighting along sidewalks and pedestrian corridors, by encouraging daytime and nighttime uses where appropriate, and by installing natural surveillance elements to increase visibility.

Action DES-1.2 – Control access to and routing of people through public areas by selective placement of entrances, fencing, lighting and natural barriers.

Action DES-1.3 – Control access to non-public areas by designing well defined spaces, delineating boundaries with appropriate fencing and landscaping, and installing security lighting and signage.

Action DES-1.4 – Minimizing perception of urban blight or neglect by implementing proper CC&R's and HOA guidelines which ensure maintenance of private spaces and buildings.

4.11.3 Impacts and Mitigation Measures

Methods of Analysis

Sources reviewed to prepare the analysis include the City's 2030 General Plan, CARD's 2019 PRMP Update, and information from the City of Chico, Butte County, CUSD, and CFD, including personal communication. This analysis evaluates the ability of the CPD and the CFD to serve the proposed project through a qualitative review of project characteristics, such as location, land uses, and access routes. The analysis also addresses whether the proposed project would require construction of additional facilities to maintain acceptable service ratios, response times or other performance objectives.

Schools

To determine the proposed project's impact on school facilities, student generation rates were obtained from the CUSD's 2018 School Fee Justification Study, shown in Table 4.11-9. Based on these generation rates and the number of market rate (family) residential units proposed, this analysis estimates that the project would generate approximately 148 elementary school students, 72 middle grade school students, and 103 high school students (see Table 4.11-10). This would result in a total increase of 323 students.

Table 4.11-9. Student Generation Rates

School Level	Single-Family Detached Units	Single-Family Attached Units	Multi-Family Units
Elementary School (TK[1]-5)	0.148	0.069	0.036
Junior High School (6-8)	0.070	0.079	0.021
High School (9-12)	0.104	0.050	0.023
Total	**0.322**	**0.198**	**0.080**

Source: Chico Unified School District 2018b.
Note:
[1] Transitional kindergarten (TK) is the first year of a two-year kindergarten program, using a modified kindergarten curriculum that is age and developmentally appropriate (California Department of Education 2019).

Table 4.11-10. Proposed Project - Student Generation

School Level	Student Generation from Single-Family Dwelling Units (874 Dwelling Units)	Student Generation from Multi-Family Dwelling Units (518 Dwelling Units)	Total Students
Elementary School (TK-5)	129.35	18.65	148
Junior High School (6-8)	61.18	10.88	72
High School (9-12)	90.90	11.91	103
Total			**323**

Source: Chico Unified School District 2018b.

Parks and Recreation

To determine potential impacts to parks, the City has established through its General Plan (consistent with the PRMP) a standard of 1.5 acres of neighborhood parkland and 2.5 acres of community parkland, for a total of 4.0 acres of parkland per 1,000 residents. Additionally, the City has a standard of 2.5 acres of greenways per 1,000 residents. The project includes a total of 5,464 new residents. Of this total approximately 2,313 would be part of the age-restricted (55+) component with the remaining 3,341 part of the market rate or family housing. Using the city's ratio of 4.0 acres of parkland and 2.5 acres of greenways per 1,000 people the project would require 21.86 acres of parks and 13.66 acres of greenways.

The analysis also assumes that the proposed project would be consistent with the City's General Plan goals and policies, emergency evacuation plans, the California Fire Code, the Leroy F. Greene School Facilities Act, and other applicable regulations; therefore, such policies and standards would not specifically be identified as mitigation, but are discussed in the impact analysis.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- 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,
  - Police Protection,
  - Schools,
  - Parks/Recreation,
  - Other public facilities.
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Project Impacts

4.11-1: The proposed project could result in impacts associated with the construction of new or expanded police or fire facilities.

Police Protection

According to the state Department of Finance January 2019 population estimates, the City had approximately 112,111 residents (California Department of Finance 2018). In November 2018, CPD had 92 sworn police officers. The CPD does not have an adopted staffing goal of the number of officers to city residents. Absent this information using the city's population, the police officer to citizen ratio is approximately 1:1,219. The VESP would provide approximately 2,777 new dwelling units, 1,385 of which would be restricted for residents 55 years old and above. Using the 2030 General Plan's persons per dwelling unit ratio of 2.4 (City of Chico

2017a), and a persons per household of 1.67[3] for the age-restricted units, the proposed project would add an additional population of approximately 5,654 residents to the city. To maintain the current police officer to citizen ratio, CPD would have to hire five new police officers. Given that CPD facilities are not at capacity, and this number is less than half of the 13 new police officers proposed as part of the staffing plan (City of Chico 2017b), it would be unlikely that new or expanded police facilities would be needed to house the extra staff needed to serve the proposed project. If necessary, any new facilities would be funded through impact fees and property taxes, subject to the provisions of the California Building Code and other regulations and would undergo CEQA review if necessary. The revenues and taxes generated from project development would contribute to funding for facilities and services that have been identified by the CPD as needed for services in the future. Additionally, the MSR notes that CPD also engages in resource and infrastructure sharing practices, such as sharing the City Corporate Yard to park and store vehicles along with CFD and other City departments. CPD also has mutual aid agreements with the Butte County Sheriff's Office to provide police protection services. Thus, impacts would be **less than significant** related to adverse physical impacts associated with the need to construct new or physically altered police facilities.

Fire Protection

Growth of the population associated with new development included under the proposed project would result in an incremental increase in demand for fire protection services, including emergency medical services. No fire protection facilities or emergency medical response services are proposed within the project site. The proposed project also includes development of approximately 447,000 square feet of commercial uses.

Age-restricted units tend to increase the demand for emergency medical services; however, the added increase in service calls associated with development of the proposed age-restricted units would not be expected to pose a significant challenge related to the ability to provide fire and medical services, as an existing fire station (Station 4) is located less than one mile west of the site boundary. There are no plans to close or move Fire Station 4, and additionally, the City is planning to re-open Fire Station 6 in the future, which would help response times in other areas of the city (Wesley Metroka, pers. comm. 2020).

Fire Station 4 located at 2405 Notre Dame Boulevard is the closest fire station to the project site, located less than one mile west. CFD crew staffed at Fire Station 4 are able to access the site quickly from Notre Dame Boulevard to Skyway. Fire Station 4 possesses a Type III Wildland Engine, specifically designed to fight fires in the urban-wildland interface (City of Chico 2019a).

As previously mentioned, CFD also provides first responder basic life support and advanced life support services. As shown in Tables 4.11-2 and 4.11-3, EMS calls typically have the quickest response times. Chico Fire-Rescue requires all fire protection infrastructure and systems recommended by industry practice be provided at the time of construction and shall be in addition to the minimum requirements of the California Building Standards and applicable Fire Codes. The California Fire Code establishes minimum requirements that would provide a reasonable degree of safety from fire, panic, and explosion. This includes a mandate for automatic sprinkler systems in new buildings and structures, including residential and buildings where the fire area exceeds 5,000 square feet, has an occupant load of 100 or more, or is located on a floor other than the level with exit to the outside (Cal. Code Regs. tit. 24 Part 9). The VESP Fire Protection Development Standards includes procedures and standards for addressing fire safety concerns, including defensible space perimeters

[3] The persons per dwelling unit ratio for age-restricted units is 1.67. This number was determined using data from the U.S. Census Bureau's 2013-2017 American Community Survey (U.S. Census Bureau 2017). Table B25116, Tenure by Household Size by Age of Householder, was used to calculate the ratio for homes (owned and rentals) with a head of household 55 years or above.

around buildings and nonflammable building materials. In addition, Policy S-4.3 of the City's General Plan supports the development and implementation of standards and programs to reduce fire hazards and requires City review of development and building applications for opportunities to ensure compliance with relevant codes. For these reasons, the proposed project would not create a need to construct new or expand existing fire protection facilities. Therefore, the project's impact associated with the provision of new or physically altered fire protection facilities for CFD would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.11-2 The proposed project could result in impacts associated with construction of new or expanded schools.

The proposed project would provide for new housing, which would be occupied by families with grade-school age children. Based on the student generation rates, the proposed project would result in approximately 323 new students (see Table 4.11-10). This does not include the 1,385 units that would be age-restricted. Additionally, this is a conservative estimate that assumes all single-family units would be detached, and all dwelling units within the MDR and MHDR land use designations would be multi-family.

As part of the proposed project, an approximately 10-acre site for an elementary school is designated adjacent to the proposed Community Park site. Elementary school students could be accommodated by this elementary school once it is constructed. However, the timeline for constructing this school is not known at this time. Therefore, elementary-age students would have to attend off-site schools until the need exists for construction of a new elementary school within the VESP and adequate funding is acquired for the new school to be built. Middle and high school students would attend schools outside of the project site. The closest elementary school to the project site is Little Chico Creek Elementary School located 1.4 miles northwest, the closest middle school is Marsh Junior High School located 1.5 miles northwest, and the closest high school is Pleasant Valley High School located 3.3 miles northwest.

Currently, district-wide capacity is able to accommodate an additional 1,263 elementary school students, 1,185 middle school students, and 1,756 high school students. After completion of improvements planned under the 2019 Facilities Master Plan Update, the district would be able to accommodate an additional 1,203 elementary school students, 697 middle school students, and 459 high school students. Thus, the increase of 323 students (148 elementary school, 72 middle school, 103 high school) from the project would not necessitate any new or expanded school facilities.

School districts impose fees on new residential and commercial development to compensate for the impact that a project would have on existing school facilities or services. Pursuant to SB 50, the project developer would be required to pay school impact fees. This payment is considered full mitigation for any impacts to school services that would result from a project. Currently, the school development fees are $3.79 per square foot of new residential development and $0.61 for commercial development (CUSD 2018b). Payment of the school impact fees would provide funding for new school construction, improvements, and expansion to existing schools. Payment of the required school impact fees would ensure satisfaction of the Proposition 1A/SB 50 statutory requirements and the impact would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.11-3 The proposed project could increase the use of existing neighborhood or regional parks, or other recreational facilities requiring the construction of new parks.

The City has established through its General Plan (consistent with the PRMP) a standard of 1.5 acres of neighborhood parkland and 2.5 acres of community parkland, for a total of 4.0 acres of parkland per 1,000 residents. Additionally, there is a standard of 2.5 acres of greenways per 1,000 residents. However, as of the 2017 update of the City's 2030 General Plan, the City did not meet the established parkland standards and estimated a need of an additional 8 to 16 parks to accommodate the anticipated service area population by 2030. The 2019 CARD PRMP includes recommendations to meet existing and future parks/recreation needs, and the City's General Plan includes Action PPFS-1.1.1, which describes the leadership role of CARD in the "operation, maintenance, and programming" of city parks (City of Chico 2017a). While not meeting a parkland standard does not directly result in an environmental impact, it does indicate that additional park and recreation facilities are needed, the provisions of which could result in adverse effects on the environment. Development projects are required to pay development impact fees for park facilities on behalf of CARD and the city in order to fund the acquisition and development of parks and recreational facilities needed as a result of new development (Action PPFS-1.1.2).

The proposed project, based on the average residents per dwelling unit in the city of 2.4 persons per household (PPH) for non-age-restricted households and 1.67 PPH for households with residents 55 years or older, would support an increase of approximately 5,654 residents in the city. The proposed project includes approximately 672 acres of a mix of parks and open space, as well as an extensive multi-use trail system. This includes an approximately 370-acre regional park that would provide a range of passive and active recreational uses including wildlife observation, hiking and running trails, mountain biking, disc gold, horseback riding as well as other recreational amenities; a 35-acre community park with a range of active recreational amenities including soccer fields, community center and gymnasium, dog park, courts, and an adventure playground; three neighborhood parks; mini-parks and tot lots; a senior and active adult park; and also a series of linear parks and Creekside parks as well as additional parks. Based on the project's population this would result in a parkland ratio of 120.8 acres per 1,000 residents, far exceeding the established parkland goals. Thus, development of the proposed project would not in and of itself necessitate the construction of new or expanded parks within the city. Additionally, the VESP includes a number of goals and actions related to parks and open space. This includes Goal PROS-2, which states that the VESP shall establish a framework of permanent open space to preserve sensitive habitat and other natural features. Goal PROS-3 states the goal to promote outdoor recreation, and its various actions include creation of a network of bike and pedestrian trails, planning of parks and other recreational facilities for both active and passive enjoyment, and to ensure that all homes within the project are within 350 yards of a park, trail, or open space element.

The increase in population associated with the project would not create a significant impact on city parks outside of the project site such that there would be substantial deterioration or a need for new or expanded parks, as the new parks would be highly accessible for all project residents. With consideration of the above, impacts would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The geographic context to evaluate cumulative impacts to service providers would include the service area boundary of the CFD, CPD, the CUSD, and future buildout of the City of Chico under the 2030 General Plan.

4.11-4 The proposed project could contribute to a cumulative increase in demand for fire services, which could result in the need to construct new fire facilities.

The geographic context of this impact includes the service area boundary of CFD and future buildout of the City of Chico under the 2030 General Plan. Cumulative growth in the city could result in a need for additional fire protection services to serve new development. Future development in the city, such as commercial, residential or industrial projects, would require fire protection services from CFD. The City's 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to fire protection (City of Chico 2010). Regarding the cumulative impact, the City's 2030 General Plan Update EIR stated that project-level CEQA review of future fire protection/EMS facilities, along with compliance with the California Fire Code, would ensure that cumulative environmental impacts associated with the construction of new fire protection and emergency medical response services facilities to support community growth would be considered less than cumulatively considerable (City of Chico 2010). Thus, there is no existing cumulative impact.

To meet the demands of future growth in the city, as well as the current population increase from displaced Paradise residents due to the Camp Fire, CFD would need to increase and/or redistribute current resources to meet response time goals and performance objectives set by the 2017 SOC Report. It is unknown what the long-term effect of the Camp Fire would be on the service population in the City. Conservatively, it is assumed it would result in some permanent increase in population beyond previous estimates.

The proposed project includes 2,777 new residential units and approximately 447,000 square feet of commercial space. The proposed project does not include the construction of any on-site fire facilities or other fire protection services. Emergency vehicle access is designated at the entryways on Skyway and East 20th Street. Chico Fire-Rescue requires all fire protection infrastructure and systems recommended by industry practice be provided at the time of construction and shall be in addition to the minimum requirements of the California Building Standards and applicable Fire Codes. The minimum requirements of the California Fire Code include mandates such as automatic sprinkler systems in new buildings and structures on certain floors meeting the criteria. Additionally, the City is planning on opening a new fire station near Eaton Road and SR 99 to serve the northeast area of the city. While this station would not directly serve the project site, it would assist in overall response times in the city. The selection of further future station sites is speculative and would be subject to CEQA review. Given the need for additional facilities within existing urbanized areas, it is assumed that impacts related to future expansion or construction of fire facilities would be less than significant, or would be substantially reduced with implementation of typical mitigation measures (similar to those described within this EIR). This conclusion is consistent with the findings in the City's 2030 General Plan Update Draft EIR, which determined that project-level CEQA review of future fire protection facilities, along with compliance with the California Fire Code, would ensure that cumulative environmental impacts associated with the construction of new fire facilities would be less than significant. Funding for any additional fire facilities that may be required would be provided through impact fees and property taxes. With consideration of the above, it is assumed that the proposed project's contribution would not be considerable and would result in a **less-than-significant cumulative impact** associated with the provision of new or expanded fire facilities.

Mitigation Measures

No mitigation measures are required.

4.11-5 The proposed project could contribute to a cumulative increase in demand for police services, which could result in the need to construct new police facilities.

The geographic context of this impact includes the service area boundary of CPD and future buildout of the City of Chico under the 2030 General Plan. Cumulative growth in the city from new residential, commercial, or other projects requiring police protection services would incrementally increase the need for new police personnel and new or expanded facilities. The City's 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to police facilities, as future facilities projects would be subject to project-level CEQA review to identify and mitigate cumulative environmental impacts. Additionally, police services go through an annual budgeting process during which citywide priorities are established and service level is monitored, and funding for additional law enforcement services would be provided through impact fees and property taxes (City of Chico 2010). The 2030 General Plan EIR also stated that cumulative impacts from construction of future law enforcement facilities projects would be subject to project-level CEQA review and therefore, the proposed General Plan Update's contribution to the continued provision of law enforcement services in the cumulative setting would be considered less than cumulatively considerable. Thus, there is no existing cumulative impact,

As previously mentioned, the proposed VESP would result an additional 5,654 residents in the city. This includes 1,385 age-restricted units that would generate approximately 2,313 residents and 1,392 market rate/family units that would generate approximately 3,341 residents. As described in Impact 4.11-1, the increase in project residents within CPD's service area is not expected to create a significant impact associated with the provision of new or physically altered police protection facilities. CPD facilities are currently not at capacity, and the increase in five police officers to uphold the current service ratio is less than half of the 13 new police officers proposed as part of CFD's staffing plan (City of Chico 2017b). The project would not require the construction of a new station or result in a significant increased demand for police services. CPD also engages in resource and infrastructure sharing practices with CFD and other City departments. Additionally, the proposed project would be built out in phases, and residents would move in throughout the years of construction. The proposed project in conjunction with build-out within the CFD service area would result in a less-than-significant impact. With consideration of the above, it is assumed that the proposed project's contribution would be less than considerable and would result in a **less-than-significant cumulative impact** associated with the provision of new or expanded police protection facilities.

Mitigation Measures

No mitigation measures are required.

4.11-6 The proposed project could contribute to a cumulative increase in demand for schools, which could result in the need to construct of new school facilities.

The geographic context of this impact includes the service area boundary of CUSD and future buildout of the City of Chico under the 2030 General Plan. Currently in progress, CUSD's 2019 Facilities Master Plan Update involves expansion and improvements to existing school sites within the city. The City's 2030 General Plan Update EIR states that impacts to school facilities would be fully mitigated through the payment of required development impact fees (City of Chico 2010). Furthermore, any significant expansion of school facilities or development of new school facilities would be subject to the appropriate CEQA environmental review, which would identify any site-specific impacts and provide mitigation to reduce those impacts. Therefore, the 2030

General Plan EIR concluded that cumulative impacts on school facilities are considered less than cumulatively considerable. Thus, there is no existing cumulative impact.

The increase of approximately 323 additional students (see Table 4.11-10) from the project itself would not cause a need for new or physically altered school facilities, due to the district-wide maximum capacity which can accommodate 1,263 students in the present and 1,203 students in 2028-2029 after improvements planned under the 2019 Facilities Master Plan Update. In addition, the proposed project includes a 10-acre site designated for a future elementary school that could be constructed in the future based on availability of funding and demand for additional school resources. The 2019 Facilities Master Plan Update indicates that CUSD would have capacity to accommodate the city's projected 2028-2029 population. Any significant expansion of school facilities or development of new school facilities would be subject to the appropriate CEQA environmental review, which would identify any site-specific impacts and provide mitigation to reduce those impacts. Consistent with the conclusions of the 2030 General Plan EIR, it is assumed that the proposed project's contribution would be less than cumulatively considerable and would result in a **less-than-significant cumulative impact** associated with the provision of new or expanded schools.

Mitigation Measures

No mitigation measures are required.

4.11-7 The proposed project could contribute to a cumulative increase in demand for parks or other recreational/public facilities, which could result in the need to construct new parks or facilities.

The geographic context of this impact includes the City and its future buildout under the 2030 General Plan. Policies and actions included in the City's 2030 General Plan support continued cooperation with CARD and other agencies (such as CUSD and CSU, Chico) to provide parks and recreation facilities for the community (Policy PPFS-1.1). As such, the City's 2030 General Plan Update EIR concluded that payment of required fees and policy provisions would mitigate any environmental impacts of park and recreational facilities to less than significant (City of Chico 2010). The 2030 General Plan Update EIR concluded that the impact on parks and recreation services would be less than cumulatively considerable, and thus, there is no existing cumulative impact.

Policies and actions included in the 2030 General Plan support continued cooperation with CARD and other agencies to provide parks and recreation facilities that offer recreation opportunities for the community (Policy PPFS-1.1). New population associated with the project is expected to be adequately served by existing and proposed expansions to recreational amenities and open space fields included as part of the project. With an increase in 5,654 individuals over the planning horizon, and with consideration of the new and expanded recreational facilities to be built as part of the proposed project, the project's contribution to impacts associated with the provision of new or expanded parks or other public facilities would not be cumulatively considerable. With consideration of the above, it is assumed that the proposed project's contribution would result in **a less-than-significant cumulative impact** associated with the deterioration or provision of new or expanded parks or other facilities.

Mitigation Measures

No mitigation measures are required.

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4.12 Public Utilities

4.12.0 Introduction

This section describes the existing public utilities (water supply, wastewater conveyance and treatment, and solid waste collection and disposal) that would serve the project site and identifies anticipated demand for these facilities resulting from implementation of the Valley's Edge Specific Plan (proposed project or VESP). The capacity of these utilities to accommodate development of the proposed project is evaluated. Section 4.5, Energy, evaluates the increase in demand for electricity and natural gas and Section 4.9, Hydrology, Water Quality and Drainage addresses storm drain infrastructure.

Comments received in response to the Notice of Preparation (NOP) include concerns associated with the proposed project's projected water demand and sources of water to serve future development, design of the stormwater drainage system, on-site flooding, and wastewater treatment. Groundwater recharge, stormwater drainage, flooding, and general hydrology concerns are addressed in further detail within Section 4.9, Hydrology, Water Quality, and Drainage. A copy of the NOP comments received along with the NOP are included in Appendix A.

Sources reviewed to prepare this section include the Water Supply Assessment prepared by EKI Environment & Water Inc. dated April 15, 2020 and included as Appendix J; Valley's Edge Development Sewer Capacity Study prepared by Carollo Engineers, the Valley's Edge Specific Plan, and information from Cal Water and the City of Chico, including personal communication.

4.12.1 Environmental Setting

The Environmental Setting describes the existing water supply and wastewater[1] infrastructure that serves the project area, as well as dry utilities and solid waste collection and disposal. Water supply and wastewater collection and treatment services would be provided by the City once the site is annexed. The proposed project would include new water, sewer, and dry utilities infrastructure on site to serve the residential and commercial development designed in compliance with City specifications. Currently there are no water, sewer, storm drain or other utilities within the project site, with the exception of 110 and 250 kilovolt (kV) high voltage overhead lines that traverse the site in an east-west and north-south direction. The project's on-site water, sewer, and storm drain lines are proposed to be located within the proposed road/driveway rights-of-way within the project site.

Water

The California Water Service Company (Cal Water) is the sole water provider for the City. Cal Water formed the Chico-Hamilton District (District) in 1926, after purchasing it from the Chico Water Supply Company, the Chico-Vecino Water Company, and the C.C. White Water Company. Today, Cal Water supplies water service to 1.7 million Californians through 435,000 connections (City of Chico 2018a). The Chico-Hamilton District is physically separated into the Chico and Hamilton portions and are located in separate groundwater basins. Thus, water supplies available to the Chico-Hamilton portion of the District are not physically available to the City's portion, and vice versa. The proposed project would be annexed into the Chico portion of the Chico-

[1] Sewer and wastewater are terms used interchangeably throughout this analysis.

Hamilton District service area so that potable water service can be provided by Cal Water (Appendix J). Therefore, the discussion primarily focuses on the Chico portion of the District, which would be the sole water supply by Cal Water for the proposed project.

The Cal Water delivery system is composed of over 355 miles of pipeline, nine surface storage structures, six booster pumps, and 55 groundwater wells (City of Chico 2018a). These pipelines include a 12-inch backbone water line that runs along E 20th Street and 8-inch lines that branch off to serve the neighborhood to the north (Steven Stull, pers. comm. 2020). A 12-inch water line also runs north on Bruce Road from Skyway to Raley Boulevard. An 8-inch water line runs approximately 300 feet from Bruce Road eastward on Skyway. The nine surface storage structures enable groundwater wells to pump to storage structures during non-peak demand periods. There are no water treatment plants in the Chico portion of the District. Water is treated via well head treatment with chlorine injections (City of Chico 2010).

Water Supply

Cal Water receives water to serve the city only from groundwater sources; no surface water is provided. The groundwater used by the District is extracted from the aquifers of the Sacramento Valley Groundwater Basin, including the Vina Subbasin, the West Butte Subbasin, and the East Butte Subbasin (City of Chico 2018a). More specifically, the Chico portion of the District and the proposed project overlay the Vina Subbasin (Appendix J). In 2008, Cal Water was able to pump up to 30,969 acre-feet per year (AFY) from the Vina Basin. However, the theoretical water supply is the total design capacity of all the active wells, which is 99,200 AFY (Appendix J). Since the Vina Basin is an unadjudicated groundwater basin and withdrawals are not limited, demand is largely limited to the capacity of the groundwater wells. Current design capacity for the operational groundwater wells (including standby wells) is 63,305 gallons per minute (gpm) (City of Chico 2010). However, continued heavy pumping during drought conditions would result in lowering of groundwater levels. Cal Water currently has a Water Shortage Contingency Plan that includes a four-stage rationing plan with both voluntary and mandatory stages, which would assist in reducing potential lowering of groundwater levels during drought events (City of Chico 2010).

The Chico portion of the District represents a small fraction of the total groundwater pumping within the Basin, the majority of which is used for agriculture. Average annual groundwater pumping from 2000 through 2014 in the Basin was approximately 31,400 AFY for municipal and industrial use, 323,600 AFY for irrigated agriculture and wetlands, and 4,000 AFY for rural residential use (Appendix J). As outlined below, Cal Water is projected to only use groundwater to supply customers with potable water through 2040 (City of Chico 2010). The projected demand for groundwater is shown in Table 4.12-1.

Based on the most recent Urban Water Management Plan (2015 - UWMP), Cal Water did not purchase imported water to serve demand in the District. Cal Water has stated that the District does not impound or divert surface water as a means for supply (Cal Water 2016). However, Butte County has an entitlement of approximately 27,000 acre-feet per year (AFY). Historically, Butte County has not made full use of the majority of this entitlement; currently there is a surplus in excess of 20,000 AFY. It is possible that Cal Water could enter into an agreement with Butte County that would make this water available to customers in the District.

There are two existing agricultural wells on the project site: a north well located near the proposed Community Park and a south well located near the proposed Village Core. It is anticipated that these wells would be used as a water source for irrigation of the public landscaping and the proposed water features on site, and as a source of water for fire suppression.

Table 4.12-1. Cal Water Proposed Project Projected Water Demand

Projected Water Demand	Future Water Demand (AFY)				
	2020	*2025*	*2030*	*2035*	*2040*
Updated 2019 Projections for Chico Portion of District	22,610	23,183	23,768	24,297	24,545

Source: Appendix J. Table 7.

Water Demand

The majority of water demand within the Chico portion of the District is from single family residential development, which represented 54% of the demand in 2018. The remainder of the overall demand was split between commercial (21%), multi-family residential (14%), institutional, industrial, and other (5%), with approximately 7% of the demand attributed to distribution system loss (Appendix J).

As outlined in Cal Water's 2015 UWMP, the total water demand for the Chico portion of the District was 26,706 in 2000, peaked at 30,873 AFY in 2004, and decreased to 27,006 AFY in 2013 (Cal Water 2016). In response to the 2012-2015 drought, the California State Water Resources Control Board (SWRCB) adopted the Drought Emergency Regulation in May 2015 (SWRCB Resolution No. 2015-0032). The Drought Emergency Regulation mandated urban retail water suppliers reduce potable water use between June 2015 and February 2016, by percentages specified by the SWRCB (Cal Water 2017). To address these requirements, Cal Water was required to reduce potable water use by 32%. In 2016, total water demand in the Chico portion of the District was 17,888 AFY, a 34% reduction from 2013 to 2016 despite a growth in services of 1,549 new hook ups (5.5%). On average, the total water demand within the Chico portion of the District averaged 18,930 AFY from 2015 through 2018 (Appendix J).

In support of the upcoming 2020 UWMP, water demands for the Chico portion of the District were estimated through 2050, by water use sector and divided into the Chico portion and Hamilton City portion. The updated demand projections show a reduction from what was projected in the 2015 UWMP by approximately 6,400 AFY (in 2020) to 13,000 AFY (in 2040) (Appendix J).

Wastewater

The City's current wastewater service area consists of approximately 14,390 acres (including developed and undeveloped land) or 22.5 square miles (City of Chico 2018a). The project site would be served by the City's wastewater infrastructure if the project is approved and the site annexed into the city. There is no wastewater infrastructure currently on the project site.

Pursuant to the City's 2013 Sewer Master Plan Update (SSMPU) and subsequent engineering analysis (Carollo 2020), off-site improvements required to serve the project and other nearby areas include construction of approximately 3.5 miles of sewer lines to connect to the City's sewer system. These sewer extensions are shown on Figure 2-11 in Chapter 2, Project Description. Required connections include replacing the existing 10-inch sewer line with a 15-inch line from Bruce Road along E. 20th Street to the project site (Doe Mill Trunk replacement); and an 18-inch sewer line from the southwest corner of the project site along Skyway to Morrow Lane, south on an easement down Cramer Lane, west on a former railroad right of way, crossing under Highway

99 and connecting to a 24-inch sewer line along Entler Avenue to Midway then northwest ultimately connecting to the City's existing infrastructure, currently at Hegan Lane. Portions of this southerly City sewer trunk line may be constructed by others, or the extension may be necessitated by development in the Specific Plan area. Conditions on any tentative subdivision map for development within the VESP would require subsequent approval of engineered drawings for the required infrastructure and construction of approved designs prior to recording the final map.

All new wastewater infrastructure on site would comply with the City standards (Title 18R of the Municipal Code) for sanitary sewer design (Municipal Code Chapter 18R.08 Table 5) and peak flow factors for average daily flows (Municipal Code Chapter 18R.08 Table 6).

The City collects residential, commercial, and industrial wastewater from its service area carried through a system of gravity sewer pipes, force mains, and lift stations to the City's Water Pollution Control Plant (WPCP). The WPCP is located approximately 4.0 miles southwest of the city in western Butte County. This collection system includes approximately 388 miles of pipelines, including 384 miles of gravity sewer lines of varying widths, from 6-inch diameter up to 66-inch diameter and four miles of force mains with 14 lift stations (City of Chico 2019). About 70% of the city's system is 8-inches in diameter and smaller.

Wastewater at the WPCP undergoes secondary treatment followed by chlorination and dechlorination prior to disposal into the Sacramento River (Cal Water 2016). The WPCP operates under strict waste discharge requirements permitted by the SWRCB Order No. 2006-0003 (adopted May 2, 2006). The WPCP permit allows for discharge of up to 3,367 million gallons per day (mgd) (City of Chico 2010).

The WPCP has a current permitted capacity of 12 mgd (City of Chico 2018b). From 2017 to 2019, the average daily influent and effluent flows at the WPCP increased by nearly 1 mgd (James Carr, pers. comm. 2020). This increase in wastewater flows has largely been attributed to the displacement of victims of the Camp Fire from the City of Paradise to Chico. However, in 2019 average daily influent and effluent flows were 7.3 mgd and 6.9 mgd, respectively (James Carr, pers. comm. 2020). These average daily flows constitute about 60% of the permitted capacity of the WPCP.

In addition to the City's wastewater, the WPCP accepts Butte County Landfill supernatant (liquid that drains or leaches from a landfill) through a Biosolids Exchange Agreement. This program accounts for approximately four million gallons annually or 0.09% of treatment capacity at the plant (City of Chico 2018a). The WPCP also operates a 1.1-megawatt solar photovoltaic facility which provides renewable electric power that approximately 35% of the WPCP's electrical demand. This solar facility is one of the largest in the nation to be installed at a wastewater treatment plant. An onsite 335-kilowatt (kW) co-generator uses methane produced by the plant and processes it as a fuel source to produce electricity, supplementing both the renewable and utility power sources. The Chico Industrial Pretreatment Program (CIPP) is also located at the WPCP. The CIPP controls wastewater discharges from businesses and industries that could interfere with the WPCP's operations or potentially harm the environment if discharged into the receiving waters of the Sacramento River.

Solid Waste Disposal

Two companies, Recology Butte Colusa Counties and North Valley Waste Management (NVWM), provide residential and commercial recycling and solid waste collection, debris box service, and compactor service for residents and businesses within the city (City of Chico 2010). The solid waste generated in the city is disposed of at the Neal Road Recycling and Waste Facility, located southeast of the city along Neal Road. The Neal Road

Recycling and Waste Facility is owned and operated by Butte County Public Works Department (CalRecycle 2020). The Neal Road Recycling and Waste Facility has a permitted capacity of approximately 25.3 million cubic yards and a remaining capacity of 20.8 million cubic yards (CalRecycle 2020). The facility is estimated to operate until 2048, accommodating 2.5% to 3.5% annual increases in solid waste due to anticipated growth in the City and Butte County. The maximum amount accepted daily at the Neal Road Recycling and Waste Facility is 1,500 tons, although the daily amount rarely exceeds 1,200 tons. The average daily tonnage accepted is approximately 500 tons (City of Chico 2010).

In 2018, the City's per capita disposal rate was 4.8 pounds/person/day (CalRecycle 2019b).

Recycled materials collected by Recology and NVWM are taken to the North Valley Disposal Transfer Station. The transfer station is permitted to process 20 tons of refuse per day and has a total permitted capacity of 107 tons (City of Chico 2010). Recycled materials collected by Recology and NVWM are taken the Neal Road Recycling and Waste Facility (City of Chico 2018a). Green yard waste is hauled primarily to the City's Compost Facility or the four other privately operated green waste collection locations (City of Chico 2018a). The City also provides a green waste collection service for residents who place leaves in the streets between mid-October and mid-January (City of Chico 2018a). As of August 2018, the City reported the Compost Facility had reached capacity and was temporarily closed to commercial customers (landscapers). The City is working closely with Waste Management to reduce/relocate the quantity of green waste to mitigate the concern, and the City's Compost Facility is now open to the public (City of Chico 2018a; City of Chico 2020).

Energy Infrastructure

Butte County and the City of Chico receive electricity from Pacific Gas & Electric Company (PG&E). PG&E provides electric services to 5.4 million customers, including 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines over a 70,000-square-mile service area that includes in Northern California and central California (PG&E 2016).

Overhead 250 kV PG&E transmission lines enter the property north of the E. 20th Street project entrance and continue southeasterly through the VESP area near the center of the southern boundary along Honey Run Road. Another 110 kV overhead PG&E line intersects the main north to south lines and enters the property along the western project boundary at the intersection of Skyway and the project's primary entrance and travels southeast until encountering the main line and continuing through the project area to the east. Electric power lines and poles are located within a 140-foot wide easement along the main north to south line and do not cross residential parcels. The east-west secondary line is located within a 40-foot wide easement. This easement traverses through residential land use areas, but maintains the easement from individual parcels and will be delineated and avoided in future subdivision mapping.

Natural Gas Infrastructure

PG&E also provides natural gas to all or part of 39 counties in California comprising most of the northern and central portions of the State, including Butte County. Within their entire service area, PG&E operates approximately 49,100 miles of transmission and distribution pipelines, and three underground storage fields with a combined storage capacity of 48.7 billion cubic feet (bcf) (PG&E 2020). In 2014, PG&E delivered 269 bcf of natural gas to its 4.4 million natural gas customers (City of Chico 2010). Much of PG&E's natural gas supply comes from western North America, including basins in western Canada, the Rocky Mountains, the southwestern United States, and California. A 25-mile pipeline carries gas between the main PG&E pipeline in

Colusa County and the Wild Goose storage facility, which stores natural gas in an underground rock formation that previously produced natural gas (City of Chico 2010). Natural gas is withdrawn and delivered to customers in Butte County over the PG&E natural gas transmission and distribution system.

4.12.2 Regulatory Setting

Federal Regulations

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The SDWA authorizes the United States Environmental Protection Agency (U.S. EPA) to set national health-based standards for drinking water to protect against both naturally occurring and manmade contaminants that may be found in drinking water. Contaminants are regulated by EPA through the establishment of primary and secondary maximum contaminant levels (MCLs). EPA has delegated responsibility for California's drinking water program to the SWRCB Division of Drinking Water. SWRCB Division of Drinking Water is responsible for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. The CWA made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. The CWA assists in the development and implementation of waste treatment management plans and practices by requiring provisions for treatment of waste using best management practices (BMPs) technology before there is any discharge of pollutants into receiving waters, as well as the confined disposal of pollution, so that it will not migrate to cause water or other environmental pollution. Additionally, CWA funds the construction of sewage treatment plants under the construction grants program.

National Pollutant Discharge Elimination System

The Water Permits Division within the U.S. EPA Office of Wastewater Management leads and manages the National Pollutant Discharge Elimination System (NPDES) permit program. As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S. The NPDES permit program oversees stormwater management and sewer and sanitary sewer overflows.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (Code Fed. Regs.,Title 40, Section 268, Subpart D), contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs that include federal landfill criteria. The federal regulations address the location, operation, design, and closure of landfills, as well as groundwater monitoring requirements.

State Regulations

Porter-Cologne Water Quality Control Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act ("Porter-Cologne Act") to preserve, enhance and restore the quality of the State's water resources. The Porter-Cologne Act established the SWRCB and the nine individual Regional Water Quality Control Boards (RWQCBs) as the principal state agencies with the responsibility for controlling water quality in California. Under the Porter-Cologne Act, water quality policy is established, water quality standards are enforced for both surface and groundwater, and the discharges of pollutants from point and non-point sources are regulated. The Porter-Cologne Act authorizes the SWRCB to establish water quality principles and guidelines for long-range resource planning, including groundwater and surface water management programs and control and use of recycled water.

The Region 5 (Central Valley) the RWQCB has jurisdiction over all of Butte County and includes the Sacramento River and San Joaquin River, two of the state's major rives, that drain in the region. The RWQCB develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources throughout the Central Valley. In accordance with Section 13263 of the California Water Code, RWQCBs are authorized to issue Waste Discharge Requirements ("WDR"), as well as periodically review self-monitoring reports submitted by the discharger, and perform independent compliance checking, and take enforcement action if necessary.

California Water Plan Update 2013

The California Water Plan is the state's blueprint for integrated water management and sustainability. The California Department of Water Resources (DWR) updates the Water Plan approximately every five years. California Water Plan Update 2013 is the latest edition of the water plan and provides statewide strategic plan for water management to the year 2050. The California Water Plan provides framework and resource management strategies promoting two major initiatives: integrated regional water management that enables regions to implement strategies appropriate for their own needs and helps them become more self-sufficient, and improved statewide water management systems that provide for upgrades to large physical facilities, such as the State Water Project, and statewide management programs essential to the California economy (DWR, 2013).

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610–10656). The act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The act describes the contents of the Urban Water Management Plans (UWMP) as well as how urban water suppliers should adopt and implement the plans. It is the intention of the act to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied (DWR, 2009c). UWMPs are required to be updated every five years. As discussed below, Cal Water adopted an UWMP for the Chico District in 2016. The next update is scheduled to be adopted in 2020.

Senate Bill (SB) 610

In 2001, Senate Bill (SB) 610 amended California law to require additional information in UWMPs if groundwater is identified as a source available to the supplier (Section 10910 et seq. of the Water Code; Section 21151.9 of the Public Resources Code [CEQA]; see also Section 15155 of the State CEQA Guidelines). Pursuant to SB 610, preparation of a "water supply assessment" (WSA) is required for projects subject to CEQA that meet specified criteria regarding project size: projects of 500 or more residential units, 500,000 square feet or more of retail commercial space, 250,000 square feet or more of office commercial space, 500 or more hotel rooms, specified industrial uses, or a project that would result in a water demand equal to or greater than the amount needed to serve a 500-unit residential project. These assessments, prepared by "public water systems" responsible for service, address whether there are adequate existing or projected water supplies available to serve proposed projects over a 20-year period, in addition to existing demand and other anticipated development in the service area. A WSA was prepared for the project and is included in Appendix J.

Senate Bill (SB) 221

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply to serve a project from the applicable water supplier(s). SB 221 is designed as a "fail-safe" mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. The law defines criteria for determining "sufficient water supply" such as using normal, single dry, and multiple dry year hydrology and identifying the amount of water that the supplier can reasonably rely on to meet existing and future planned uses. Government Code section 66473.7 (b)(1) states, "The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request." In other words, as a result of the information contained in the written verification, the city or county may attach conditions to assure there is an adequate water supply available to serve the proposed project as part of the tentative map approval process.

Drought Emergency Regulation, Executive Order B-29-15

In response to the 2012-2015 drought, the Governor issued Executive Order B-29-15 on April 1, 2015, directing the SWRCB to develop regulations regarding water use. The executive order included a mandatory 25% reduction of urban potable water use for the State between June 2015 and February 2016. On May 5, 2015, the SWRCB adopted the Drought Emergency Regulation (Resolution No. 2015-0032) mandating potable water use reductions for all water suppliers in California and implementing a number of water use restrictions. The Drought Emergency Regulation placed each urban water supplier in a conservation tier, ranging between 8 and 36%, based residential per capita water use for the months of July – September 2014. Cal Water was required to reduce potable water use by 32%. Resolution No. 2015-0032 also directed staff to work with stakeholders to further develop and consider a range of factors that contribute to water use, including but not limited to climate, growth, investment in local, drought resilient supplies, and others.

California Integrated Waste Management Act and Related Regulations

AB 939 established the California Integrated Waste Management Act of 1989 (Public Resources Code Section 40050 et seq.), which requires all California cities and counties to reduce the volume of solid waste deposited in landfills by 50% by 2000, and to continue to remain at 50% or more diversion for each subsequent year. The Act requires each California city and county to prepare, adopt, and submit to CalRecycle a Source Reduction and Recycling Element (SRRE) that demonstrates how the jurisdiction will meet the Act's mandated diversion rate. AB 939 also established the goal for all California counties to provide at least 15 years of on-going landfill capacity, as well as the authority and responsibilities of the California Integrated Waste Management Board (CIWMB), which administers the Act. In January 2010, the California Department of Resources Recycling and Recovery (CalRecycle) replaced the CIWMB.

In 1999, AB 75 required each state agency and large state facility to develop and adopt Integrated Waste Management Plans, implement programs to reduce waste disposal, and have their waste diversion performance annually reviewed by CalRecycle (Public Resources Code Sections 40148, 40196.3, 41821.2, and Chapter 18.5 [Section 42920 et seq.]). AB 75 also requires all state agencies and large state facilities to divert at least 25 percent of their solid waste from landfills by January 1, 2002, and at least 50% on and after January 1, 2004.

AB 341, adopted in October 2011, also amended the California Integrated Waste Management Act and established a statewide policy goal to divert 75% of solid waste from landfills by 2020. AB 341 focused on mandatory commercial recycling and requires California commercial enterprises and public entities that generate 4 or more cubic yards per week of waste, as well as multi-family housing complexes with 5 or more units, to arrange for recycling services.

Mandatory commercial recycling was one of the measures adopted in the AB 32 Scoping Plan by the California Air Resources Board (CARB), pursuant to the California Global Warming Solutions Act (Chapter 488, Statutes of 2006, codified at California Health & Safety Code Section 38500 et seq.). (AB 32 is further described below.) The mandatory commercial recycling measure is focused on increasing waste diversion from commercial uses to reduce greenhouse gas emissions (greenhouse gas resulting from decomposition of organic waste in landfills has been identified as a significant source of emissions contributing to global climate change). The measure establishes an objective of reducing greenhouse gas emissions by 5 million metric tons of carbon dioxide equivalent. To meet this objective, the commercial sector will be required to recycle an additional 2 to 3 million tons of materials annually by 2020. This regulation reflects the statutory provisions of AB 341 and provides additional procedural clarifications.

Statewide Trash Amendments

Trash in California has historically been regulated at varying levels by the California SWRCB and the nine RWQCBs. To provide statewide consistency regarding trash control, on April 7, 2015, the SWRCB adopted the Proposed Final Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the Proposed Final Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) (together "Statewide Trash Amendments"). The goal of the Statewide Trash Amendments is to address the impacts of trash to the surface waters of California through the establishment of a statewide narrative water quality objective and implementation requirements to control trash, including a prohibition against the discharge of trash. Trash reduction in the storm drain systems will result in trash reductions in the receiving waters to which these systems drain The Statewide

Trash Amendments became effective on December 2, 2015. Additionally, the City's new development and redevelopment standards will be revised to include a condition of approval which requires installation of trash controls during construction. This will enable the City to proactively address new projects as they are developed and address trash on-site instead of the public right-of-way and storm drain system.

Electric Tariff Rule 20

The California Public Utilities Commission (CPUC) instituted the current utilities undergrounding program in 1967. It consists of two parts. The first part, under Tariff Rules 15 and 16, requires new subdivisions (and those that were already undergrounded) to provide underground service for all new connections. The second part of the program, under Tariff Rule 20, governs both when and where a utility may convert overhead lines to underground facilities, and who shall bear the cost of the conversion (CPUC 2020a).

Rule 20 provides three levels, A, B, and C, of progressively diminishing ratepayer funding for the projects, and a sub-program D which is specific to undergrounding in SDG&E's Fire Threat District. Approximately 35-40 miles of overhead lines are converted each year to underground through Rule 20 Sections A, B, and C. Rule 20A projects are constructed in areas of a community that are used most often by the general public. Rule 20A projects are nominated by the city or county and are paid for by the electric utility ratepayers. Because ratepayers contribute the bulk of the costs of Rule 20A programs through utility rates, the projects must be in the public interest by meeting one or more of the following public interest criteria (CPUC 2020a):

- Eliminate an unusually heavy concentration of overhead lines;
- Involve a street or road with a high volume of public traffic;
- Benefit a civic or public recreation area or area of unusual scenic interest;
- Be listed as an arterial street or major collector as defined in the Governor's Office of Planning and Research (OPR) Guidelines.

As of June 2020, there are three Rule 20A projects in Chico at North Esplanade, Warner Street, and Bruce Road between Highway 32 and E. 20th Street (CPUC 2020b).

Local Regulations

Design Criteria and Improvement Standards

The City's Design Criteria and Improvement Standards are found in Title 18R of the Municipal Code. It establishes lot configurations that are in conformance with General Plan goals and zoning code requirements and makes provision for public utility easements. In addition, it sets engineering and design standards for storm drains, sewer, water supply, fire hydrants, streetlights, street trees and landscaping. Standards for public and private streets are also established in 18R.08.020 and 18R.08.035. A public street is publicly maintained and open to the public. A private street is privately owned and maintained, and not part of the City street system.

City of Chico Sanitary Sewer Master Plan Update

The City's Sewer System Management Plan (SSMP) (City of Chico 2019) was prepared in compliance with the requirements of the SWRCB Order No. 2006-0003 adopted May 2, 2006, that requires all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under General

Waste Discharge Requirements. The SWRCB action, which applies to the City, mandates the development of an SSMP, which compiles the policies, procedures, and activities that are including in the planning, management, operation, and maintenance of the City's sanitary sewer system.

On July 21, 2009, the City Council adopted Resolution 49-09, which approved the first SSMP. After adopting the first update in 2011, the City adopted a second Sanitary Sewer Master Plan Update (SSMPU) in 2013. The 2013 SSMPU included proposed collection system improvements and projects to address existing hydraulic conditions and buildout conditions. Three projects, the new Southeast Trunk Sewer, Honey Run Trunk Sewer, and Doe Mill Trunk Sewer are required to serve the project.

In 2020, the City Public Works Department updated the analysis contained in the SSMPU. The 2020 Sewer Memorandum analyzes revised land use assumptions, particularly in the actively developing southeast portion of the City, and updates recommended pipe sizes associated with the three sewer projects mentioned above (Carollo 2020).

City of Chico Municipal Code

Chapters 8.04 through 8.14 of the City's Municipal Code set forth the City's solid waste provisions, including restrictions on disposing of any garbage, rubbish, or waste matter in the City other than at a disposal site established by the City Council or designated by the City Manager, prohibitions on solid waste collectors disposing of recyclable materials, and restrictions on accumulation of solid waste on residential properties. Title 15 of the Municipal Code, Utility Services, regulates the storm drainage system, wastewater services and discharge requirements, and outlines utility service and capacity fees. Title 15R, Water and Sewers, identifies the sewer service fees charged by the City to premises connected to the wastewater system, as described above. Title 15R also contains discharge requirements (local limitations on specific pollutants), industrial wastewater permit, reporting, and sampling requirements

City of Chico General Plan

The proposed project is subject to relevant goals, policies, and actions listed in the City of Chico 2030 General Plan. Goals, policies, and actions related to water supply, wastewater, and solid waste disposal are included below.

Parks, Public Facilities, and Services Element

Goal PPFS-4: Maintain a sanitary sewer system that meets the City's existing and future needs, complies with all applicable regulations, and protects the underlying aquifer.

Policy PPFS-4.1 (Sanitary Sewer System) – Improve and expand the sanitary sewer system as necessary to accommodate the needs of existing and future development.

Action PPFS-4.1.1 – (Require Connection to Sewer System) – Require all commercial and industrial development, as well as all residential development with lots one acre or smaller, to connect to the City's sewer system.

Policy PPFS-4.4 (Wastewater Flows) – Ensure that total flows are effectively managed within the overall capacity of the Water Pollution Control Plant.

Goal PPFS-5: Maintain a sustainable supply of high quality water, delivered through an efficient water system to support Chico's existing and future population, including fire suppression efforts.

Policy PPFS-5.2 (Future Water System) – Consult with Cal Water to ensure that its water system will serve the City's long-term needs and that State regulations SB 610 and SB 221 are met.

Action PPFS-5.2.1 (Water Flow and Pressure) – Ensure that new City infrastructure provides for water flow and pressure at sufficient levels to meet domestic, commercial, industrial, institutional, and firefighting needs.

Action PPFS-5.2.2 (Wells and Private Water Systems) – Where public water delivery systems are available, discourage use of wells and private water systems for domestic water use.

Action PPFS-5.2.3 (Water Services for New Development) – Work with Cal Water to ensure that water treatment and delivery infrastructure are in place prior to occupancy or assured through the use of bonds or other sureties to the City and Cal Water's satisfaction.

Policy PPFS-5.3 (Water Conservation) – Work with Cal Water to implement water conservation management practices.

Action PPFS-5.3.1 (Treated Wastewater) – Explore the feasibility of using treated wastewater to provide irrigation to landscaped areas and other suitable locations to reduce the demand for groundwater.

Goal PPFS-8: Ensure that solid waste and recyclable collection services are available to City residents.

Policy PPFS-8.1 (Waste Recycling) – Provide solid waste collection services that meet or exceed state requirements for source reduction, diversion, and recycling.

Action PPFS-8.1.1 (Green Waste) – Encourage recycling, composting, and organic waste diversion within the City and continue providing green yard waste recycling services, seasonal leaf collection and street sweeping services.

Action PPFS-8.1.6 (Recyclable Construction Materials) – Use the Green Building Checklist to encourage the use of recyclable materials in new construction.

Action PPFS-8.1.7 (Commercial and Industrial Recycling) – Require compliance with the State-wide Mandatory Commercial Recycling requirements for commercial and industrial customers.

Open Space and Environment Element

Goal OS-3: Conserve water resources and improve water quality.

Policy OS-3.3 (Water Conservation and Reclamation) – Encourage water conservation and the reuse of water.

Action OS-3.3.1 (Water Conservation Program Funding) – Work with the California Water Service Company to implement a water conservation program to reduce per capita water use 20 percent by 2020 pursuant to the requirements of the State Water Plan.

Action OS-3.3.2 (Reduce the Use of Turf) – Limit the use of turf on landscape medians, parkways, and other common areas in favor of native and drought tolerant ground cover, mulch, and other landscaping design elements, and support the conversion of existing turf to less water-intensive ground cover types.

Action OS-3.3.3 (Parkway Irrigation) – Design and monitor irrigation systems in medians and parkways to maximize efficiency and minimize nuisance run-off.

Action OS-3.3.5 (Water Efficient Landscape Irrigation) – Enforce the requirements of state water conservation legislation when reviewing landscaping plans for new projects.

Valley's Edge Specific Plan

The Valley's Edge Specific Plan includes the following goals, policies, or actions related to water supply, wastewater, and solid waste disposal. The VESP policies and actions would direct development and future buildout of all phases of the project and are listed below.

Chapter 2 Guiding Principles, Goals and Actions

Section 2.3.4 Chapter 6: Infrastructure and Public Facilities

Goal INFR-4: Promote On-Site Clean Energy Generation Reduce GHG emissions through on-site clean energy generation

Action INFR-4.1 – Require HOA owned and operated facilities to provide infrastructure capable of generating solar photovoltaic power covering no less than 20% of its internal base electrical loads.

Section 2.3.6 Appendix A: Design Guidelines

Goal DES-2: Build durable, energy efficient and healthy homes with visual appeal and architectural continuity.

Action DES-2.1 – Energy and Atmosphere: Build homes that meet or exceed CALGreen energy efficiency standards. Promote Net Zero ready designs and all electric (low carbon fuel source) buildings.

Action DES-2.2 – As applicable, ensure 100% of residential buildings to utilize solar photovoltaics per Title 24.

Action DES-2.3 – Water Efficient Design: Reduce residential water use by 20% or greater from baseline water use through Waterwise fixtures and consumer education.

Action DES-2.4 – Materials and Methods: Utilize material efficient construction methods, locally sourced products, durable materials and materials from renewable resources.

Action DES-2.6 – Construction waste reduction: Minimize construction waste and costs through modular off-site sub-assemblies and temporary on-site recycling facility (as economically feasible).

Action DES-2.12 – Reduce outdoor water consumption and improve native wildlife habitat through drought tolerant native landscaping and efficient irrigation methods.

4.12.3 Impacts and Mitigation Measures

Methods of Analysis

Potential project impacts on water, wastewater, and solid waste disposal were evaluated based on the adequacy of existing and planned infrastructure and the capacity to meet additional demand for these services resulting from the proposed project. Sources reviewed to prepare the analysis include the City's 2030 General Plan, the City's 2013 SSMPU and 2019 SSMP, the Carollo VESP Sewer Capacity Study, and information from the City of Chico and Cal Water.

Water

The project's estimated water demand represents the total demand from all of the land uses proposed on site. The Water Supply Assessment (Appendix J) for the project broke down the 2,777 total residential dwelling units into 368 very low density residential (VLDR) units, 1,371 low density residential (LDR) units, 876 medium density residential (MDR) units, and 162 medium-high density residential (MHDR) units. These housing types were further divided into "Family Housing" and "Senior Housing". Each housing type uses a different water use factor (gpd/du) dependent on density, house size, lawn area, and inclusion of a pool. The "Commercial and Institutional" land use category estimated the 10 acres of school would require 0.042 gpd/sf and the commercial uses would use 0.035 gpd/sf. Table 4.12-2 displays the project's anticipated water demands plus the distribution system losses. Although distribution system losses from newly-constructed infrastructure would be expected to be minimal, it is conservatively assumed the proposed project would be consistent with the average real loss calculated by the Department of Water Resources (i.e., 28.7 gallons per connection per day). The total annual water demand at buildout in 2040 would be 1,748 AFY.

Table 4.12-2. Summary of Estimated Annual Project Water Demand

Land Use Category	Total Water Demand (AFY)[1]			
	2025	*2030*	*2035*	*2040*
Residential				
Single-Family Housing	280	760	1,099	1,275
Multi-Family Housing	0	12	20	20
Commercial and Institutional	13	62	104	129
Community Landscaping	33	145	201	201
Water Features	34	34	34	34
Distribution System Losses	19	55	79	89
Total Annual Water Demand[1]	**381**	**1,068**	**1,537**	**1,748**

Source: Appendix J.
Note:
[1] AFY = acre feet per year
Total water demand is the sum of the estimated water uses for each land use, plus the assumed distribution system losses. Totals may not add exactly due to rounding.

Wastewater

The analysis of impacts to wastewater treatment services is based on wastewater treatment demand generated by the proposed project compared to the thresholds of significance listed below. Wastewater demand for the

proposed project was quantified based on the following assumptions: (1) a single family residence produces 288 gallons per equivalent dwelling unit (EDU) per day of wastewater, (2) one multi-family residential unit is equivalent to 0.846 EDU, and (3) all other non-residential uses produce 1,500 gallons of wastewater per acre (City of Chico 2010). The project's total wastewater generation is calculated in Table 4.12-3, below.

Table 4.12-3. Summary of Estimated Annual Project Wastewater Generation

Land Use	Unit	Wastewater Generation Rate	Wastewater Generation (gal/day)
Residential: Single Family	2,614 EDU	288 gal/EDU	752,832
Residential: Multi-Family	137 EDU	288 gal/EDU	39,456
Commercial	56.3 acres	1,500 gal/ac	84,450
Parks and Open Space	79.2 acres[1]	1,500 gal/ac	118,800
		Total (gal/day or ac)	**995,538**
		Total (mgd)	**0.996**

Source: Cal Water 2017.
Notes: gal/ac = gallons per acre per day
[1] Only includes active parks.

As shown in Table 4.12-3, the project's total wastewater generation would be 995,538 gpd or approximately 0.996 mgd average dry weather flows (ADWF).

Solid Waste

The analysis of impacts to landfill capacity is based on the amount of solid waste that would be generated by the proposed project compared to the thresholds of significance listed below. Using a construction waste generation rate published by the United States Environmental Protection Agency, the project would generate 4.38 pounds per square foot for construction of a single family residential dwelling unit and 3.89 pounds per square foot for construction of a multi-family residential dwelling unit and commercial space prior to any diversion or recycling (Cal Water 2017). The project's total construction solid waste generation is calculated in Table 4.12-4 below.

Table 4.12-4. Construction Solid Waste Generation

Land Use	Units	Waste Generation Rate	Waste Generation (tons)	Waste Generation (cubic yards)
Residential: Single Family	2,614 EDU	4.38 lbs/sf	10,304	14,426
Residential: Multi-Family	162 EDU	3.89 lbs/sf	315	441
Commercial	447,155 sf	3.89 lbs/sf	869	1,217
		Total	**1,1489**	**16,084**

Source: CalRecycle 2019c.
Notes: Single Family Home estimated at 1,800 sf. Multi-Family unit assumed to be 1,000 sf.
1 ton= 2,000 pounds or 1.4 cubic yards

Development of the proposed project would generate an estimated 16,084 cubic yards of construction debris prior to recycling.

Operational Waste

The proposed project's operational solid waste generation is calculated in Table 4.12-5 below. At project buildout an estimated 10,742 cubic yards of operational solid waste would be generated, prior to recycling.

Table 4.12-5. Operational Solid Waste Generation

Land Use	Units	Waste Generation Rate	Waste Generation (tons/year)	Waste Generation (cubic yards/year)
Residential: Single Family	2,614 EDU	10 lbs/du/day	4,771	6,678
Residential: Multi-Family	162 EDU	4 lbs/du/day	118	165
Commercial	56.3 acres	5 lbs/1000/day	2,237	3,132
School	10 acres	0.007lbs/sf/day	548	767
		Total Peak Amount	**5,674**	**10,742**

Source: CalRecycle 2019c.
Notes: 1 ton= 2,000 pounds and 1.4 cubic yards

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
- 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.
- 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.
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Threshold Criteria not Applicable to the Proposed Project.

Telecommunications

There are several purveyors providing telecommunications services such as telephone service, cable television, and Internet services within the City of Chico (City of Chico 2010). Telephone and Internet service providers include Verizon Wireless, Cingular, Sprint, AT&T, Metro PCS, Pacific Bell, 2B Telecom, Norcal Wireless, and Comcast. Comcast provides cable television services in the City, while DISH Network and DirecTV provide satellite television services (City of Chico 2017a). These telecommunications services have the capacity to increase demand and would serve the project site. The construction of telecommunications infrastructure would be installed in conjunction with other utilities. Therefore, this issue is not further discussed.

Stormwater

The project's increase in stormwater and proposed drainage infrastructure is addressed in Section 4.9, Hydrology, Water Quality and Drainage. Please refer to this section for a discussion on impacts associated with stormwater including stormwater infrastructure.

Project Impacts

4.12-1 The proposed project would require the construction of new or expanded water, wastewater treatment, electric power, or natural gas lines.

Water

The provision of expanded water service to the project site would require the expansion and development of new water infrastructure facilities that would connect to Cal Water's existing water infrastructure. At the northwest corner at the eastern terminus of E. 20th Street, the project would connect to a 12-inch backbone water line which would serve as one connection point to Cal Water infrastructure. In the southern portion of the project site, an existing 12-inch water line runs north on Bruce Road from Skyway to Raley Boulevard and an 8-inch water line also runs approximately 300 feet from Bruce Road eastward on Skyway. The second connection point would include a main-line extension from the project's primary entry west along Skyway to a point near Bruce Road, ultimately creating a looped water system. This connection at Skyway would require an off-site water line extension (approximately 0.5 mile) to the west along Skyway, which would be required to serve the project as well as future development designated in the General Plan (Frayji Design Group 2019). Depending on the sequencing of phased development within the plan area, the initial connection(s) to Cal Water's existing infrastructure may be at either location.

In order meet the average day and maximum day requirements of new customers, the project would build a water system with traditional underground piping, including 6-inch to 12-inch pipe sizes, with fire hydrants, underground wells, booster pumps, pressure reducers and a permanent one million gallon water storage tank (Carollo 2020). It is anticipated the project's backbone water infrastructure would include a series of water lines.

General Plan action PPFS-5.2.3 and Municipal Code Chapters 18R.08.070 and 18R.08.080 require the City to work with Cal Water to ensure that adequate water supply and delivery infrastructure are in place prior to occupancy or assured through the use of bonds or other sureties to the City and Cal Water's satisfaction. Implementation of these actions would ensure that water infrastructure would be available in time to meet the demand created by new development, and that the project has met all of Cal Water's conditions necessary to provide water service. The incremental design and installation of water infrastructure by the developer(s) would ultimately result in a fully looped system, owned and operated by Cal Water. Impacts associated with the relocation or construction of new or expanded water supply infrastructure would be **less than significant**.

Wastewater

As shown on Figure 2-9, in Chapter 2, Project Description, the proposed project would require the expansion and development of new on-site wastewater infrastructure as well as approximately 3.5 miles of off-site sewer pipelines to support buildout of the project (discussed below). There is no existing wastewater infrastructure on the project site. The project's onsite backbone sewer infrastructure would be comprised primarily of 8-inch to 12-inch sewer lines, designed to accommodate the topography and existing resources on the site. In

instances where gravity fed sewer lines are not practical or economical, subject to Public Works approval, lift stations and associated force mains may be used. Similarly, in order to avoid excessively deep hard rock trenching, a siphon system(s) may be installed.[2] Private residential sewer pumps may also be required to manage topographic and/or geological constraints, which would connect to gravity fed sewer lines and/or a force main sewer line for conveyance. As the project's sewer system is further refined and reviewed by the City, latitude for adopting new standards and/or features not otherwise described in the VESP may be allowed, subject to the approval of the Director of Public Works (City of Chico 2018a).

The project's onsite sewer system would connect to the City's existing wastewater system at two points—one on the north side of the project at E. 20th Street and one near the south entrance along Skyway.

As for the northern portion of the project site, the existing 10-inch sewer line within the E. 20th Street right-of-way would be replaced with a 15-inch sewer line (Doe Mill Trunk replacement) from Bruce Road east to the project boundary, a distance of roughly 3,960 lineal feet (see Figure 2-11 in Chapter 2, Project Description) (Carollo 2020). The project developer of the initial phase of the project at the northerly project entry would be responsible for preparing detailed engineering plans and constructing new sewer infrastructure to serve the development, including extending or installing any required sewer main lines to adequately serve the project while maintaining service to existing users of the sewer infrastructure in the area, and payment into the City's Development Impact Fee Program as applicable under the Chico Municipal Code.

Existing trunk line capacity for the Doe Mill Trunk replacement , including capital improvements planned and described in the 2013 SSMPU and the memorandum prepared by Carollo Engineers (Carollo 2020) are sufficient to serve the VESP project, as well as all development currently entitled and expected in the vicinity.

The proposed southern connection would tie into the City's "Honey Run Trunk Sewer" near Skyway and Bruce Road that would serve the southern portion of the project site, including the Very Low Density Residential proposed in the southeast corner of the plan area. The new off-site portion of this sewer line would begin as an 18-inch sewer line from the southwest corner of the project site along Skyway to Morrow Lane, south on an easement down Cramer Lane, west on a former railroad right-of-way, crossing under Highway 99 and connecting to a new 24-inch sewer line to be installed along Entler Avenue to Midway then heading northwest connecting to existing infrastructure at Hegan Lane (see Figure 2-11 in Chapter 2, Project Description). Portions of this southerly City sewer trunk line may be constructed by others, or the extension may be necessitated by development in the plan area. Conditions on any tentative subdivision map for development within the VESP would require subsequent approval of engineered drawings for the required infrastructure and construction of approved designs prior to recording the final map

The SSMPU also calls for a new 15-inch line eastward along Honey Run Road to serve the portion of the project called "Equestrian Ridge" located in the southeastern portion of the plan area.

The proposed project would generate slightly less than 1 million gpd, which could be accommodated under the WPCP's current permitted capacity of 12 mgd. The current water pollution control plant operates at 5.8 mgd (Carr, pers comm.). New development included in the 2030 City of Chico General Plan have met their responsibility for plant upgrades in 2010 when the plant expansion was completed for a 12 mgd treatment plant. Those costs were included in a loan financing and impact fee program. As discussed below in Impact

[2] A siphon system allows liquid to flow uphill, powered by the fall of the liquid due to gravity. Gravity pulling the liquid down on the exit side of the siphon results in reduced pressure at the top, moving liquid upwards.

4.12-2, the WPCP has adequate capacity to treat the project's wastewater and no upgrades to the plant would be required. Therefore, buildout of the proposed project would not require the construction of new infrastructure beyond what has been identified and evaluated in this EIR. As such, impacts regarding the relocation or construction of new or expanded wastewater facilities would be **less than significant.**

Electric Power and Natural Gas Infrastructure

PG&E would provide electrical power and natural gas to serve the project from existing services in E. 20th Street and Skyway. There are existing overhead PG&E transmission lines that enter the project site north of the E. 20th Street project entrance and continue southeasterly near the center of the southern boundary along Honey Run Road. A secondary overhead PG&E line intersects the main north to south line and enters the property along the western project boundary at the intersection of Skyway and the project's primary entrance and travels southeast until encountering the main line and continuing through the project area to the east. These overhead lines would remain within the designated PG&E easements within the project site.

PG&E is required by the California Public Utilities Commission (CPUC) to update the existing systems to meet any additional demand (City of Chico 2010). Per CPUC Rule 20, additional electrical and natural gas infrastructure and facilities added on site would be collocated with other utilities underground within roadway right-of-way as phases of the project are developed (CPUC 2020a). The infrastructure related to electrical power would be designed in accordance with Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Impacts related to the expansion of electrical and natural gas infrastructure would be **less than significant.**

Off Site Utilities

Impacts associated with installation of infrastructure both within the project site and off-site are addressed in Section 4.3, Biological Resources and Section 4.4, Cultural and Tribal Cultural Resources. Section 4.3 notes that within the area designated for off-site wastewater infrastructure required to serve the project, suitable habitat was identified for several special-status wildlife species and native and migratory birds protected by the California Fish and Game Code. The off-site utilities would be constructed within existing roadway rights-of-way or within existing utility corridors. Utilities would be installed within the roadway shoulder or other previously disturbed areas along Skyway, Morrow Lane, and Cramer Lane and would occur within the paved portion of E. 20th Street, Midway and Entler Avenue. Construction could require some tree and temporary vegetation removal to accommodate trenching and mitigation is to avoid impacts to these species during off-site utility construction. Section 4.4 also noted project construction and trenching for utilities would disturb on-site soils and could unearth a previously unknown subsurface archaeological or historical resource. Mitigation included in Sections 4.3 and 4.4 address the environmental impacts associated with construction of off-site utility infrastructure.

Mitigation Measures

No mitigation measures are required.

4.12-2 The proposed project would increase demand for water supplies to serve the project during normal, dry, and multiple dry years.

Cal Water would supply the project with potable water service through an extension of Cal Water's existing facilities. As noted in Section 4.12.1, Environmental Setting, the total average water demand for the City's portion of the District from 2015 through 2018 was 18,930 AFY (Appendix J). As shown in Table 4.12-3, the annual water demand at buildout of the project would be 1,748 AFY. The total water demand for the Chico portion of the District, including the proposed project, is estimated to be 26,293 AFY (i.e., 24,545 AFY within the existing service area and 1,748 AFY of additional water demands associated with the project) (Appendix J). The project's water demand would represent approximately 6.6% of the water needs within the Chico District. The theoretical water supply for Cal Water is the total design capacity of all the active wells, which is 99,200 AFY. However, the project's WSA (Appendix J) estimated that the sustainable pumping range and water supply for the Chico portion of the District based on historical groundwater changes and pumping levels range from 23,287 AFY (the approximate level that would result in no groundwater level change) to 33,462 AFY (the approximate level that would decrease groundwater levels by approximately 1.0 feet per year). Therefore, given the total water demand for the Chico District, including the proposed project which would be within the sustainable range, there would be sufficient groundwater production capacity to supply all conditions (i.e., normal, single dry, and multiple dry years including a 5-year drought period) of the project's estimated water demand. Impacts to water supplies would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.12-3 The proposed project could generate an increase in wastewater demand that exceeds the capacity of the treatment plant to serve the project.

The City's WPCP would provide wastewater treatment to serve buildout of the proposed project. As previously discussed, the WPCP's permitted capacity is 12 mgd. In 2018, the City's ADWF[3] was 6.0 mgd, and in 2019, was 6.9 mgd (Carr, pers. comm.). Currently, the WPCP is treating 5.8 mgd. The project's total wastewater demand would be 995,538 gpd or approximately 0.996 mgd ADWF, as outlined in Table 4.12-3. This addition of 0.996 mgd would represent an approximately 14% increase from average daily flows in 2019. However, the project's increase in demand for wastewater treatment would not exceed the 12 mgd capacity of the WPCP and would not necessitate expansion of the WPCP beyond what is already planned. As such, impacts reading wastewater treatment capacity would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

[3] The average dry weather flow (ADWF) is the average flow that occurs on a daily basis during the dry weather season. The ADWF includes the base wastewater flow (BWF) generated by the City's users, plus dry weather groundwater infiltration (GWI).

4.12-4 The proposed project could generate an increase in solid waste in excess of landfill capacity or impair attainment of solid waste reduction goals.

The proposed project would generate an increase in solid waste associated with construction activities as well as from project operation.

Construction Waste

Construction of the project would generate construction debris such as wood, metal, asphalt and concrete, containers and packaging, and other miscellaneous waste.

The Neal Road Recycling and Waste Facility has a permitted capacity of approximately 25.3 million cubic yards and a remaining capacity of 20.8 million cubic yards (CalRecycle 2020). Development of the proposed project would generate an estimated 16,084 cubic yards of construction debris, as shown in Table 4.12-4. This represents 0.077% of the 20.8 million cubic yards in available capacity at the Neal Road Recycling and Waste Facility. If debris is not separated to remove recyclable materials, this would represent increased demand on disposal capacity in the short-term. However, building contractors would be required by CalGreen to recycle 50% of Construction and Demolition debris from all new construction projects (City of Chico 2017a). Given the Neal Road Landfill's maximum permitted throughput of 1,500 tons per day and remaining capacity of 20.8 cubic yards, the net increase in solid waste generation from construction would not exceed the capacity of the landfill. Therefore, short-term construction impacts on landfill capacity would be **less than significant.**

Operational Waste

Development of the proposed project would conservatively generate an estimated 10,742 cubic yards of operational solid waste annually, as shown in Table 4.12-5. The project's estimated operational waste generation represents 0.05% of the available capacity at the Neal Road Recycling and Waste Facility. The values displayed in the table are not adjusted for recycling and waste reduction activities that would divert waste from the landfill. Even taking this into consideration, adequate landfill capacity is available to meet the needs of the project at full buildout. Implementation of the proposed General Plan Update policies and associated actions shown above would further assist in solid waste reduction measures. Adequate landfill capacity is available to serve the project; therefore, impacts associated with an increase in solid waste associated with project operation would be **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.12-5 The proposed project would comply with federal, state, and local regulations related to solid waste.

During construction and operation of the proposed project, future project developers would be required to comply with all applicable City, County, and State solid waste diversion, reduction, and recycling mandates. These include the City's Source Reduction and Recycling Element (SRRE), Municipal Code Chapters 8.04 through 8.14, General Plan goals and policies, as well as the VESP actions. General Plan Action PPFS-8.1.1 encourages recycling and composting; Action PPFS-8.1.6 encourages the uses of recyclable materials in new construction; and Action PPFS-8.1.7 requires commercial uses to comply with the State-wide Mandatory Commercial Recycling requirements. VESP Action DES-2.6 also encourages the minimization of construction waste. Compliance with these regulations and mandates would assist in reducing the amount of waste deposited in local landfills. Therefore, impacts related to regulatory compliance would **be less than significant.**

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The cumulative impact analysis includes projected buildout under the City of Chico 2030 General Plan. In addition to buildout under the City's General Plan, the geographic context for water, wastewater treatment, solid waste, and energy includes buildout of the specific service area for each utility. This includes recently approved and reasonably foreseeable development within the boundaries of the Cal Water Chico-Hamilton District service area, as well as all other areas obtaining water from the Sacramento Valley Groundwater Basin, the City's service area for wastewater which consists of 22.5 square miles both within and outside the city limits, the Neal Road Recycling and Waste Facility service area for solid waste, and the PG&E service area for energy and natural gas.

4.12-6 The proposed project could contribute to a cumulative impact related to construction of new water, wastewater treatment, electric power, and natural gas facilities, or exceed landfill capacity.

Water Supply

The total water demand in 2040 for the Chico District is estimated to be 26,293 AFY (i.e., 24,545 AFY within the existing service area and 1,748 AFY of additional water demand associated with the project) (Appendix J). As groundwater withdrawals within the Chico District are not limited by regulation, the theoretical water supply is the total design capacity of all the active wells, which is 99,200 AFY (City of Chico 2010). In order to meet the average day and maximum day requirements of new customers under projected buildout, new wells, booster stations, and surface storage facilities would need to be constructed. Planned wells within the Chico District would increase the total water supply capacity to 104,039 AFY in the near future, and the total supply capacity of the system is further expected to increase slightly over time as new wells are installed (City of Chico 2010). The 2015 UWMP identifies limited supply projections as compared to current capacity of existing and planned wells. Even with this limitation, the projected supply in 2030 is 163% of the projected demand (City of Chico 2010). The project's WSA updated the 2015 UWMP analysis and confirmed that Cal Water has capacity to support future demand within the Chico District through 2040 (Appendix J).

The analysis indicates that the estimated pumping rates and water demand of the Chico District are not anticipated to create significant water level declines in the Basin, given that municipal and industrial pumping accounts for less than 9% of total Basin pumping (Appendix J). Therefore, the Vina Basin groundwater supply is estimated to be sufficient to support the Chico District's projected water demands without causing significant and unreasonable effects on groundwater levels and storage. Given the following: (1) historic groundwater use in the Basin and demand is within the sustainable pumping range, (2) the demonstrated effectiveness of the Chico District's Water Shortage Contingency Plan, and (3) the increasing efficiency and drought planning requirements from the State, sufficient water supply is estimated to be available to Cal Water to meet all future demands within the Chico District service area (Appendix J). Therefore, the 2015 UWMP and the City's 2030 General Plan Update EIR concluded that adequate water supply is available to serve build-out of the City and the Chico District. The cumulative impact would be less than significant related to water supply demand. Therefore, the project's contribution would not be cumulatively considerable and the project's cumulative impact is **less than significant.**

Wastewater

The City's 2030 General Plan EIR notes that increased growth and projected buildout within the City would increase wastewater flows that would need to be treated and ultimately discharged into the Sacramento River (City of Chico 2010). The permitted capacity of the Chico WPCP is 12 mgd and the City currently makes use of approximately 48% of its average dry weather capacity at the WPCP.

At projected buildout of the 2030 General Plan, assuming all properties including those currently served by septic systems connect to the City's system, the City's ADWF are expected to double to 13.9 mgd (City of Chico 2018a). However, according to the WPCP Strategic Planning Report (City of Chico 2021), the 12 mgd capacity would not be eclipsed during the 20-year planning period (2020-2040).The ADWF for the WPCP is projected to increase 60% by 2040, from 5.9 mgd to 9.4 mgd (City of Chico 2021). At buildout of the 2030 General Plan, the peak wet weather flow (PWWF) is projected to increase from 20.5 mgd to approximately 35 mgd (City of Chico 2018a). Although PWWF often exceed a treatment facility's permitted capacity and can be diverted or stored until there is sufficient capacity, there are segments of the existing wastewater system that cannot convey PWWF at buildout without flows backing up above allowable levels. As outlined in the 2019 SSMP, the City plans to implement a list of improvements recommended to mitigate capacity deficiencies in the collection system and to accommodate the projected buildout. These 19 capacity-related capital improvement projects would be implemented over four phases as development progresses (City of Chico 2013). The capital improvement projects identified for the wastewater system include both improvements to existing facilities and new sewers to serve future growth. When fully implemented, the capital improvement projects would allow the conveyance of PWWFs to the WPCP to support buildout of the General Plan.

Therefore, as the City has identified capacity deficiencies in the wastewater system and outlined plans to accommodate the projected buildout of the General Plan, including the project, the cumulative impacts associated with wastewater conveyance and treatment facilities would be less than significant. Therefore, the project's contribution would not be cumulatively considerable and the project's cumulative impact would be **less than significant.**

Solid Waste

Buildout of the General Plan would generate construction and operational solid waste, which would require collection and disposal in landfills. According to the 2030 General Plan EIR, the projected buildout of the General Plan would generate approximately 453,117 pounds of residential solid waste per day and 510,962 pounds of business waste per day. Assuming no waste diversion, the total waste generated would be 482.1 tons per day and would not exceed the landfill's maximum permitted disposal of 1,500 tons per day (City of Chico 2010). In addition, the Neal Road Landfill had a remaining capacity of 20.8 million cubic yards and is expected to have capacity to operate until 2035, accommodating a 2.5% to 3.5% annual increase in waste due to anticipated growth in Chico and Butte County (City of Chico 2018a). The General Plan EIR determined adequate landfill capacity would be available for projected buildout and cumulative impacts would be less than significant. Therefore, the project's contribution would not be cumulatively considerable and the project's impact would be **less than significant.**

Energy and Natural Gas

Future development would increase the demand for electricity within PG&E's service area. However, future residential and nonresidential development would be required to adhere to the state's current energy efficiency requirements and it is anticipated new development would be more energy efficient. In addition, distribution infrastructure would be co-located with other utilities within roadway rights-of-way that would minimize the extent of environmental effects (City of Chico 2010). Policies from the General Plan and the VESP include measures to prevent the wasteful use of energy as well as meet the State's energy efficiency standards. The General Plan EIR concluded that implementation of General Plan policies would ensure that future development within the City would not result in significant impacts associated with the cumulative increase in demand for energy resulting in the need for construction or expansion of facilities (City of Chico 2010). Since other jurisdictions in PG&E's service area are also required to meet the State's Title 24 energy efficiency standards, it is anticipated future development would not contribute to a significant cumulative impact due to increased energy demand and the need for associated infrastructure. Therefore, the project's contribution would not be cumulatively considerable and the project's cumulative impact would be **less than significant.**

Mitigation Measures

No mitigation measures are required.

4.12.4 References

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4.13 Transportation and Circulation

4.13.0 Introduction

This section analyzes the potential transportation and circulation impacts of the Valley's Edge Specific Plan project (VESP or proposed project) under Existing and Cumulative Conditions. The analysis addresses impacts to Skyway, Honey Run Road, E. 20th Street, Bruce Road, and other local streets within the City of Chico (City) associated with the project. The analysis includes consideration of the total vehicle miles traveled (VMT), and potential impacts on transit, and bicycle and pedestrian circulation. Where significant impacts are identified, mitigation measures are recommended to lessen their significance. General Plan consistency analysis related to roadway capacity and operations is included in Appendix K.

Comments received in response to the Notice of Preparation (NOP) from public agencies and the public include concerns about increased traffic on E. 20th Street, traffic operations on Skyway with the proposed project access, increased traffic from the proposed school, and concerns that the two access roads would not be adequate. All of these concerns are addressed in this section. A copy of the NOP and comments received are included in Appendix A.

The primary sources used to prepare this section include the Valley's Edge Specific Plan, City of Chico General Plan, the Butte County Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), and Caltrans State Route 99 Transportation Concept Report.

4.13.1 Environmental Setting

This section describes the existing environmental setting. The existing transportation and circulation system within the study area includes roadways, bicycle facilities, pedestrian facilities, and public transit service and facilities.

Project Study Area

The study area was developed in collaboration with City staff and the EIR consultant. The following factors were considered when developing the study area: the project's expected travel characteristics (trip generation and distribution), primary travel routes to and from the project, and travel mode split. Figure 4.13-1 displays the location of the study area.

Existing Roadway System

A network of local roadways and freeway facilities form the roadway system within the study area. Key roadways within the study area are described below.

- ***Bruce Road*** is a north-south arterial connecting residential areas north of State Route (SR) 32 and near E. 20th Street to the industrial and retail land use along Skyway. Bruce Road is currently a two-lane facility with a posted speed limit of 45 miles per hour (mph) in the project site area between E. 20th Street and Skyway. It becomes three lanes wide (two northbound lanes) between E. 20th Street and Picholine Way, and it is four lanes through some of the residential areas north of SR 32.
- ***E. 20th Street*** is a major east-west arterial that begins at Park Avenue and continues east through the SR 99 interchange to Bruce Road, where the roadway continues as a collector through residential development. E. 20th Street is a divided four lane roadway with channelized left turn pockets at major

streets, a posted Class II bike lane, and a posted speed limit of 35 mph until Notre Dame Boulevard. East of Notre Dame Boulevard, E. 20th Street is primarily a two-lane roadway with a Class II bike lane and posted speeds between 25 mph and 35 mph.

- ***Skyway*** is generally an east-west arterial that provides access to SR 99 on the south end of Chico. On the east side of SR 99, Skyway connects Chico to smaller communities such as the Town of Paradise and Stirling City. Within the study area, Skyway is a four lane-facility with posted speed limits in the range of 35 to 45 mph. Skyway becomes E. Park Avenue west of SR 99.
- ***Notre Dame Boulevard*** is a north-south arterial through residential neighborhoods. It begins south of Skyway and currently terminates south of Little Chico Creek. Notre Dame Boulevard begins again north of Little Chico Creek and then transitions to El Monte Avenue. The roadway is primarily two lanes with a posted speed limit of 25 mph, except for a section between Forest Avenue and Skyway where it is four lanes with a posted speed limit of 35 mph.
- ***Raley Boulevard*** is currently a short east-west street segment between Forest Avenue and Bruce Road just north of Skyway. Raley Boulevard is two lanes wide and provides access to the Skyway Professional Center.
- ***State Route 32 (SR 32)*** is a California state highway connecting the City to Orland to the west and the Sierra Nevada to the east. In the study area, SR 32 is a two-lane arterial with a posted speed limit between 45 mph and 55 mph.
- ***State Route 99 (SR 99)*** is a California state highway connecting the City to other cities in the region such as Red Bluff, Yuba City, and Sacramento. SR 99 also connects to the Interstate-5 freeway near Red Bluff to the north of Chico and North Natomas to the south of Chico. Within the study area, SR 99 is a four-lane freeway facility that connects to the City roadway network via interchanges at Skyway and at E. 20th Street.
- ***Midway*** is primarily a two-lane arterial that begins south of E. Park Avenue and provides a connection from the City to Durham and Richvale and ultimately dead ends at SR 162.

Existing Bicycle System

The following types of bicycle facilities exist within the study area:

- Class I – A Class I facility, commonly referred to as a Bikeway or Bike Path, is a facility separated from automobile traffic for the exclusive use of bicyclists. Class I facilities can be designed to accommodate other modes of transportation, including pedestrians and equestrians, in which case they are referred to as shared or multi-use paths.
- Class II – Class II facilities, commonly referred to as Bike Lanes, are dedicated facilities for bicyclists immediately adjacent to automobile traffic. Class II facilities are identified with striping, pavement markings and signage.
- Class III – Class III facilities, commonly referred to as Bike Routes, are on-street routes where bicyclists and automobiles share the road. They are identified with pavement markings and signage, and are typically assigned to low-volume and/or low-speed streets.

The project site vicinity is currently served by a variety of bicycle facilities. Class II bike lanes exist on E. 20th Street and on segments of Bruce Road, Notre Dame Boulevard and Skyway. A Class I Bike Path (the Steve Harrison Memorial Bike Path formerly known as Potter Road) forms the western boundary of the proposed project site providing a connection from E. 20th Street to Skyway. Figure 4.13-2 displays the bicycle facilities in the study area.

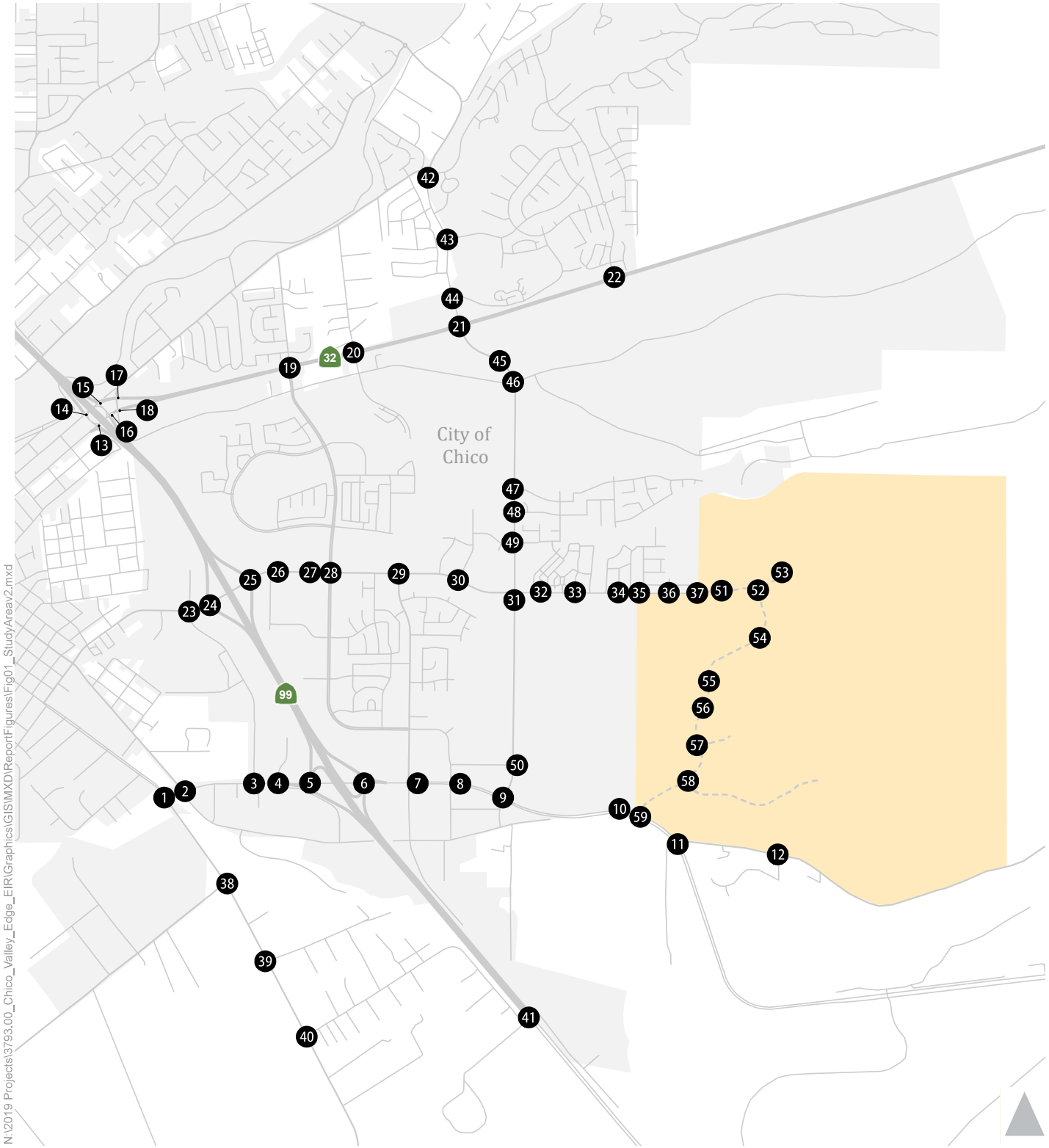

Figure 4.13-1

Study Area

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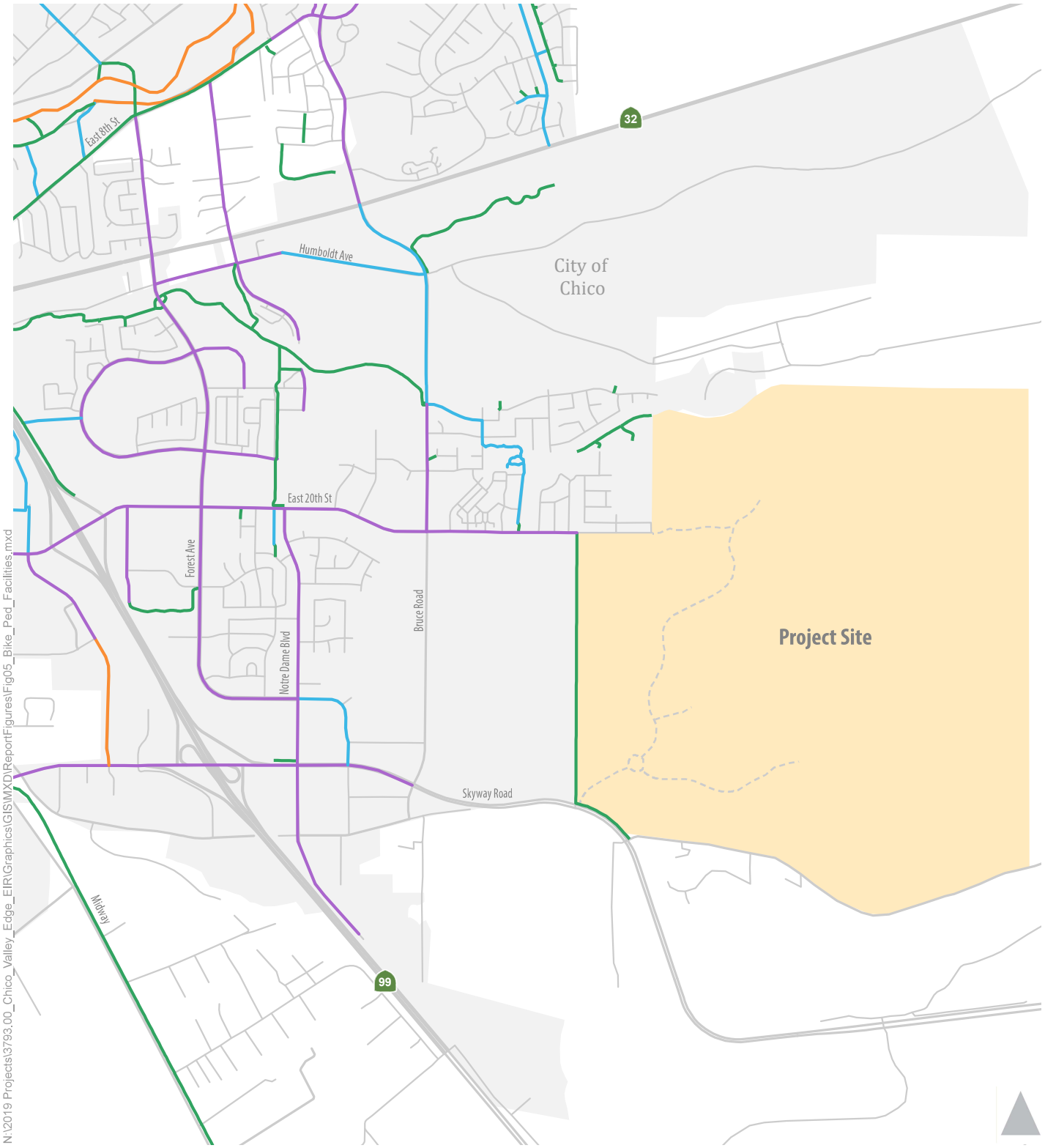

Figure 4.13-2

Existing Bicycle Facilities

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Existing Pedestrian System

Sidewalks are present along E. 20th Street west of Concord Avenue and east of Bruce Road and along most of Skyway. Sidewalks do not exist along most of Bruce Road between SR 32 and Raley Boulevard. Crosswalks are present at local signalized intersections in the study area. Figure 4.13-3 shows the existing pedestrian facilities and areas of missing sidewalks along key roadways within the study area.

Existing Transit System

Local Butte Regional Transit (B-Line) provides bus service in Chico and throughout Butte County. Seven B-Line Routes serve the study area, as shown on Figure 4.13-4 and described in Table 4.13-1.

Table 4.13-1. Existing Transit Service Schedule Summary

Route	Weekday		Saturday		Sunday	
	Freq. (min)	*Span*	*Freq. (min)*	*Span*	*Freq. (min)*	*Span*
5 - E. 8th Street	30 – 60	6:15 AM – 8:30 PM	60	8:15 AM – 7:00 PM	—	—
7 – Manzanita/Bruce	30 -180	6:45 AM – 5:30 PM	—	—	—	—
14 – Park/Forest/ MLK	20 - 60	6:24 AM – 9:45 PM	60	7:50 AM – 6:45 PM	—	—
17 – Park/MLK/ Forest	60	7:30 AM – 6:05 PM	60	8:30 AM – 6:05 PM	—	—
20 – Chico – Oroville	60 – 120	5:50 AM – 8:00 PM	120 - 150	7:50 AM – 6:00 PM	120 - 150	7:50 AM – 6:00 PM
40/41 – Chico/ Paradise/Magalia1	30 - 150	6:35 AM – 7:20 AM	Varies	9:45 AM – 6:00 PM	—	—

Source: Butte Regional Transit, 2020.
Note:
[1] Reflects special Post Campfire Schedule.

Butte Regional Transit (B-Line) provides service within the City with 14 routes. Except for Routes 8 and 9, which are supported by strong ridership demand associated with CSU Chico, routes generally measure at or below 20 passengers per revenue hour. Routes operating below 20 passengers per revenue hour are considered underperforming. The nearest B-Line stop is located near the intersection of Bruce Road/E 20th Street (along Route 7) approximately one-half mile west of the proposed project. Route 7 operates at about 10 passengers per revenue hour. Generally, this level of performance is indicative of low demand and productivity. Routes performing at this level would have excess seating and standing capacity.

4.13.2 Regulatory Setting

Federal Regulations

No federal plans, policies, regulations, or laws related to transportation and circulation are applicable to the proposed project.

State Regulations

Senate Bill 743

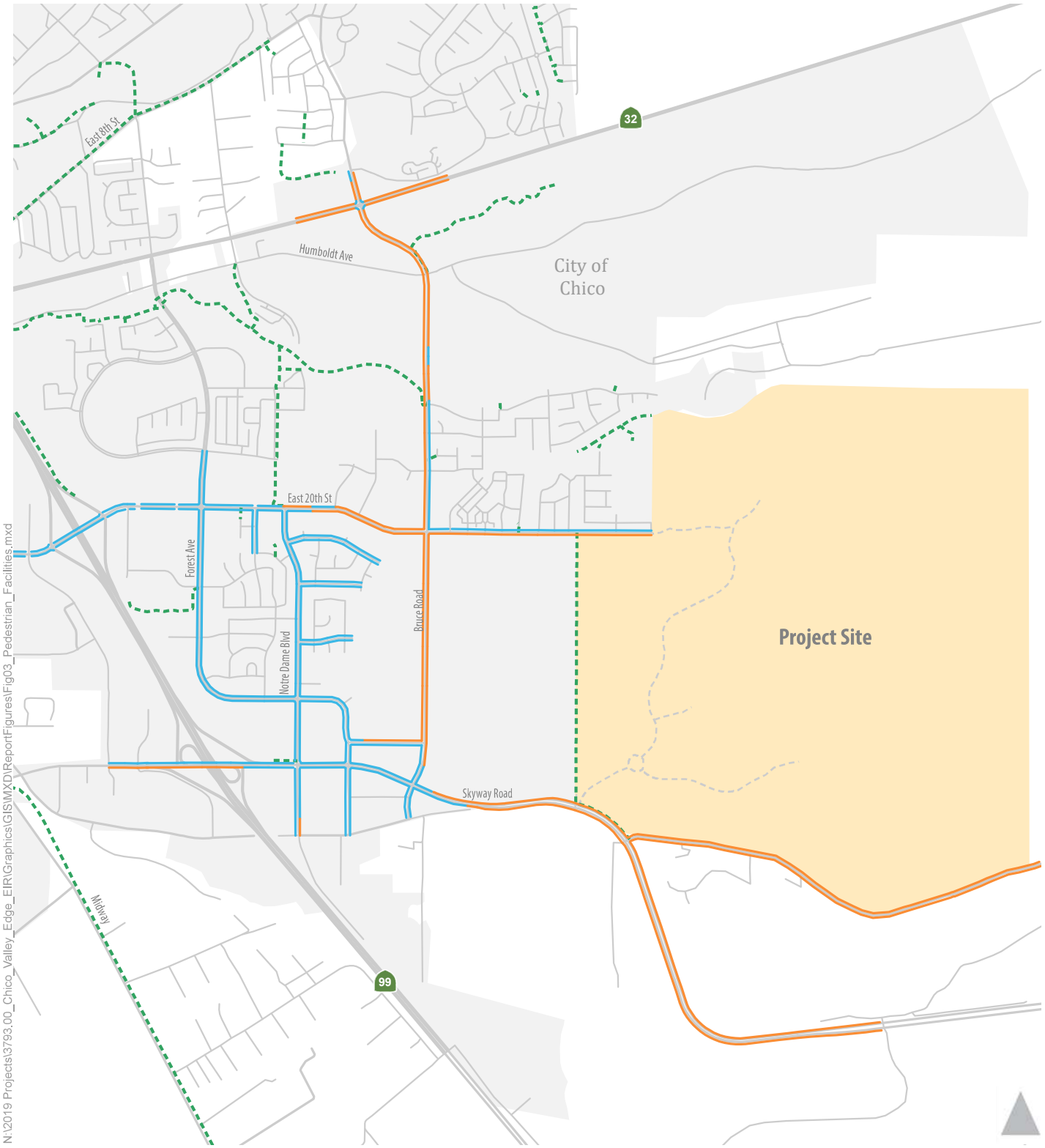
Senate Bill (SB) 743 was signed into law in 2013, in part to address greenhouse gas (GHG) emissions which contributed to substantial changes in the way transportation impact analyses are being prepared. Notably, it precludes the use of level of service (LOS) to identify significant transportation impacts in CEQA documents for land use projects, recommending instead that VMT be used as the preferred metric. On December 28, 2018, the CEQA Guidelines were amended to add Section 15064.3, Determining the Significance of Transportation Impacts, which states that generally, VMT is the most appropriate measure of transportation impacts. According to 15064.3(a), "Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." Beginning on July 1, 2020, the provisions of 15064.3 applied statewide.

On December 18, 2019, California's Third District Court of Appeal published an opinion in *Citizens for Positive Growth & Preservation v. City of Sacramento*, which involved a challenge to the City of Sacramento's adoption of its General Plan based on LOS instead of VMT for transportation impact identification. In reaching its decision in that case, the Court of Appeal applied Public Resource Code section 21099(b)(2) and stated, "existing law is that 'automobile delay, as described solely by level of service, or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment under CEQA, except for roadway capacity projects.'" The Court therefore concluded that the General Plan's policies that included LOS standards could not be used as a threshold to determine whether the project would have a significant environmental impact under CEQA. VMT is used to identify the project's potentially significant transportation impacts for the purposes of this EIR.

Regional Regulations

Butte County Association of Governments Regional Transportation Plan and Sustainable Communities Strategy

The Butte County Association of Governments (BCAG) is responsible for the preparation of, and updates to the RTP/SCS and the corresponding Regional Transportation Improvement Program (RTIP). The MTP/SCS provides a 20-year transportation vision for the region and corresponding list of projects. The RTIP identifies short-term projects (5-year horizon) in more detail.



Note: Sidewalks not shown outside project vicinity and residential roadways.

Figure 4.13-3

Existing Pedestrian Facilities

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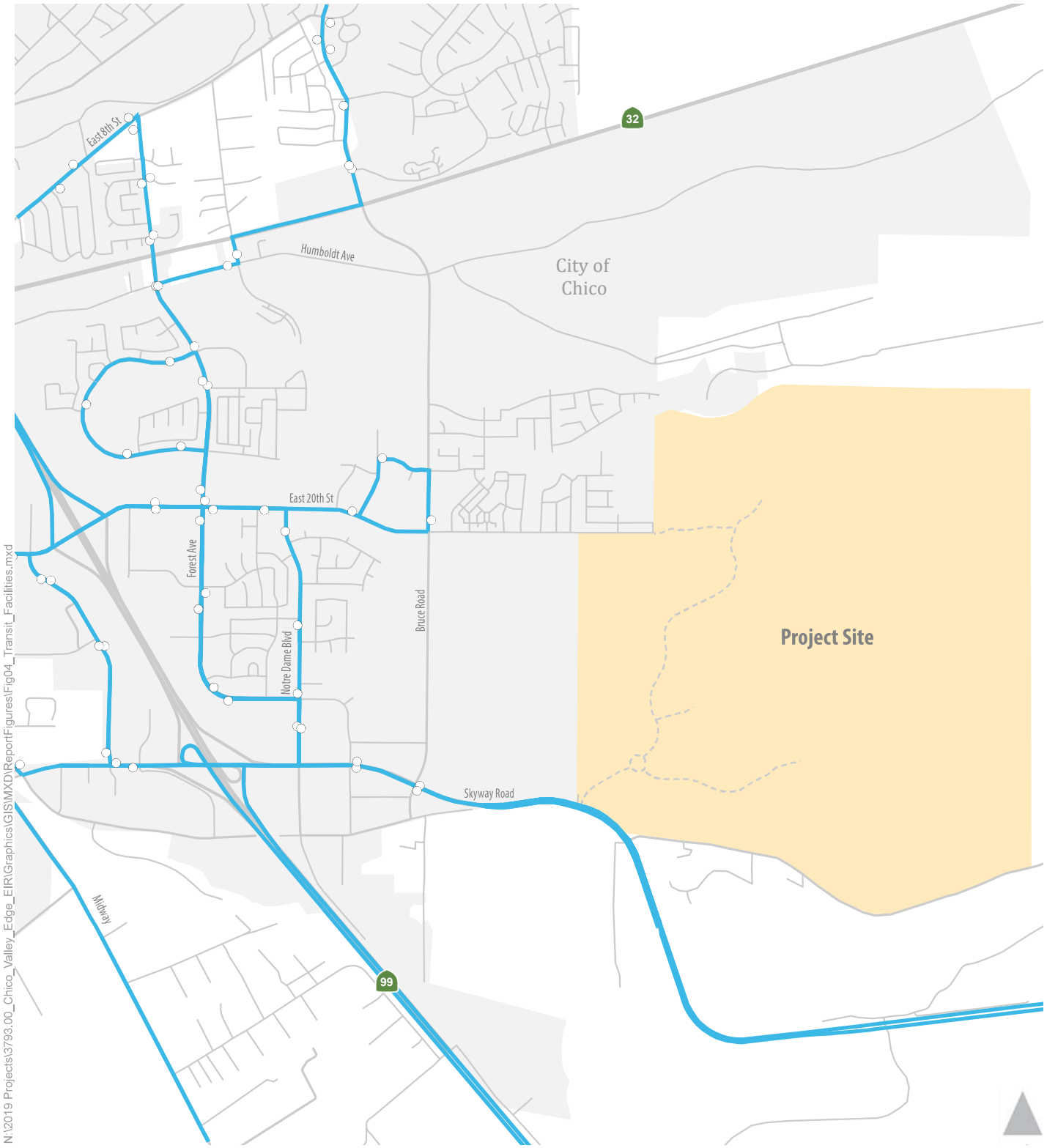

Figure 4.13-4

Existing Transit Facilities

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Local Regulations

City of Chico General Plan

The City of Chico 2030 General Plan (Adopted: April 2011, Amended: March 2017), provides long-range direction and policies for the use of land within the City. The Circulation Element of the General Plan provides the framework for achieving the City's transportation system goals. The Circulation Element outlines the goals and policies necessary for the City to achieve its vision of a multimodal transportation network that accommodates vehicles, transit, bicycles, and pedestrians. For the purposes of this EIR, the goals and policies of this document were used in developing the impact significance criteria.

The City of Chico General Plan Circulation Element includes the following goals, policies, and actions related to transportation that are relevant to evaluation of the proposed project:

Goal CIRC-1: Provide a comprehensive multimodal circulation system that serves the build-out of the Land Use Diagram and provides for the safe and effective movement of people and goods.

Policy CIRC-1.1 (Transportation Improvements) – Safely and efficiently accommodate traffic generated by development and redevelopment associated with build-out of the General Plan Land Use Diagram.

Action CIRC-1.1.1 (Road Network) – Enhance existing roadways and intersections and develop the roadway system shown in Figure CIRC-1 (Roadway System Map) over the life of the General Plan as needed to accommodate development.

Policy CIRC-1.2 (Project-Level Circulation Improvements) – Require new development to finance and construct internal and adjacent roadway circulation improvements as necessary to mitigate project impacts, including roadway, transit, pedestrian, and bicycle facilities.

Policy CIRC-1.3 (Citywide Circulation Improvements) – Collect the fair share cost of circulation improvements necessary to address cumulative transportation impacts, including those to state highways, local roadways, and transit, pedestrian and bicycle facilities, through the City's development impact fee program.

Policy CIRC-1.5 (Vehicle Miles Travelled Analysis) – Consistent with State law, implement Vehicle Miles Travelled (VMT) assessments as part of the environmental review process under CEQA.

Action CIRC-1.5.1 (VMT CEQA Analysis) – For projects that require a full traffic analysis as part of the CEQA review process, perform a VMT analysis consistent with the California Office of Planning and Research CEQA Guidelines.

Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.

Policy CIRC-2.1 (Complete Streets) – Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street as a public space that unites the City.

Action CIRC-2.1.3 (Multimodal Connections) – Provide connections between and within existing and new neighborhoods for bicycles, pedestrians, and automobiles.

Policy CIRC-2.2 (Circulation Connectivity and Efficiency) – Provide greater street connectivity and efficiency for all transportation modes.

Action CIRC-2.2.1 (Connectivity in Project Review) – New development shall include the following internal circulation features:

- A grid or modified grid-based primary street system. Cul-de-sacs are discouraged, but may be approved in situations where difficult site planning issues, such as odd lot size, topography, or physical constraints exist or where their use results in a more efficient use of land, however in all cases the overall grid pattern of streets should be maintained;
- Traffic-calming measures, where appropriate;
- Roundabouts as alternative intersection controls, where appropriate;
- Bicycle and pedestrian connections to adjacent streets, trails, public-spaces, and bicycle paths; and
- Short block lengths consistent with City design standards.

Action CIRC-2.2.2 (Traffic Management) – Perform routine, ongoing evaluation of the street traffic control system, with emphasis on traffic management, such as signal timing and coordination or the use of roundabouts, to optimize traffic flow along arterial corridors and reduce vehicle emissions.

Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.

Policy CIRC-3.3 (New Development and Bikeway Connections) – Ensure that new residential and non-residential development projects provide connections to the nearest bikeways.

Action CIRC-3.3.1 (Bikeway Requirements) – Require pedestrian and bicycle connections to the Citywide bikeway system every 500 feet, where feasible, as part of project approval and as identified in the Bicycle Master Plan.

Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.

Policy CIRC-4.2 (Continuous Network) – Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.

Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.

Policy CIRC-5.3 (Transit Connectivity in Projects) – Ensure that new development supports public transit.

Action CIRC-5.3.2 (Transit Improvements for New Development) – During project review, consult with BCAG to determine appropriate requirements for the installation of stops and streetscape improvements, if needed to accommodate transit.

The General Plan Safety Element includes the following actions related fire response time that is relevant to evaluation of the proposed project:

> **Action S-4.1.1 (Fire Response Time)** – Strive to obtain an initial response time of five and a half minutes or less for at least 90 percent of fire emergency response calls in urbanized areas.

Chico Bicycle Plan 2019 Update

The Chico Bicycle Plan 2019 Update (City of Chico, 2019) establishes goals and objectives for recreational and transportation-related bicycle use in Chico. The plan identifies future on- and off-street bicycle facility improvements.

Chico of Chico Municipal Code (Section 3.85)

Section 3.85 of the Municipal Code address the adoption and assessment of development fees, including fees for transportation facilities needed to support new development.

Chico of Chico Code of Ordinance Title 18R

Title 18R of the Code of Ordinance sets forth design criteria for the purpose of insuring that subdivision and non-subdivision public right-of-way and private street improvements constructed within the city are designed in such a manner that each meets or exceeds uniform levels of sound engineering practice and that the individual elements contained therein have a uniform level of development with no single element overdesigned to the detriment of another.

Valley's Edge Specific Plan

The Valley's Edge Specific Plan includes Guiding Principles, Goals, and Actions to support implementation of the Specific Plan. These policies and actions would direct development and future buildout of all phases of the project. For the purposes of this EIR, the goals actions of this document were used in evaluating the project against the identified thresholds of significance.

Chapter 2 Guiding Principles, Goals and Actions

Section 2.3.1 Chapter 3: Parks, Recreation, and Open Space

Goal PROS-3: Promote Outdoor Recreation & Complement Bid: Promote outdoor recreation by creating space and facilities which foster play, exercise, adventure, and social interaction. Strive to complement Bidwell Park by emulating cherished elements, such as Horseshoe Lake, hiking trails, biking trails, and space for equestrians, disc golfers, bird watchers, and outdoor enthusiasts.

> **Action PROS-3.1** – Create connections to parks and open space from neighborhoods, school, and commercial areas with a network of bike and pedestrian trails.

> **Action PROS-3.5** – Design neighborhoods, trails, and parks to ensure that 100% of the homes in the plan area are within 350 yards of a park, trail, or open space element.

> **Action PROS-3.8** – Create and maintain no less than 20 miles of open space biking, hiking, and multi-use trails for recreation, play, exercise, and non-motorized transit.

Section 2.3.3 Chapter 4: Land Use

Action LU-5.7 – Create a 10' wide enhanced trail to serve as a fire break within the Regional Park along the northern boundary of the planning area abutting Stilson Canyon.

Section 2.3.3 Chapter 5: Circulation and Trails

Goal C-1: Multi-modal Circulation and Minimize Greenhouse Gas (GHG) Impacts: Minimize GHG impacts by providing a variety of transportation choices and incorporating features that result in vehicular trip reduction.

Action C-1.1 – Create a network of bike and pedestrian trails that connects the community, enables safe and convenient access between land uses and places of interest, fosters healthy outdoor experiences, and reduces automobile reliance.

Action C-1.2 – Develop an integrated, multi-modal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street as a public space that unites the community.

Action C-1.3 – Promote non-vehicular travel by creating a network of Class I trails and improved surface trails that cater to residents' and children daily travel trips, safe and efficient routes of travel between residential areas and school, parks, shopping areas, service and employment areas.

Action C-1.4 – Promote increased trail usage by ensuring that 100% of the homes are within 350 yards of a connection to the overall trail network.

Action C-1.5 – Promote and encourage neighborhood electric vehicles (NEV's) by designing all roadways to accommodate their use.

Action C-1.6 – Minimize travel distance and transit efficiency by locating land uses serving the broader Chico community at the westerly edge of the plan area, directly accessible from the main collector roadway and the Class I trail system facilitating on and off-site connectivity.

Action C-1.7 – Promote electric vehicle usage by providing EV charging stations in public parking lots and in all multi-family projects, by providing 240V outlet in no less than 50% of all garaged residential units, and by supporting electric bike and scooter rental services (e.g., Lime, Bird).

Action C-1.8 – Promote the use of bicycles as modal transportation by designing streetscapes and rest areas to provide shade, and by designing bike lanes, intersections, and roundabouts to enable safe passage.

Action C-1.9 – Create an intermodal park and ride lot along the western plan area boundary, served by both the major collector roadway and the Class I trail system.

Action C-1.10 – Ensure that sheltered transit stops are located as directed by BCAG and the City of Chico.

The following guidelines and standards from the VESP Firewise Guidelines and Standards contained in Chapter 4, Land Use, are applicable to transportation:

- Where applicable, signage shall convey street names, fire apparatus open space access points, no exit streets, maximum weight limits for bridge and culvert crossings, and mile markers along Class 1 and enhanced trailways.
- Roadways shall not exceed a 12 percent grade except in limited instances and distances in areas serving residential land uses as may be necessary to minimize grading, properly address a unique site constraint, or to accommodate an emergency access route. In any of these instances, approval of these exceptions will be subject to the Chico Fire Department and Public Works Director. Driveways shall be prohibited along sections of roads exceeding a 12 percent grade, unless approved by Chico Fire Department and Public Works Director.
- Roads shall be a minimum of 20-feet wide and driveways shall be a minimum of 12-feet wide to allow evacuation and emergency vehicles simultaneous access.
- Roads shall maintain a 13.5-foot vertical clearance to accommodate emergency vehicles.
- Class I bike paths and enhanced trails shall include design features that minimize barriers to emergency response, such as knock-down bollards for emergency access at trailheads.
- Areas such as the Community Park, Big Meadows Park, and the Elementary School may be designated, labeled, and signed as safety zones for citizens unable to evacuate or for emergency responder use. These areas shall be evaluated by Chico Fire Department before designated a safety zone.

4.13.3 Impacts and Mitigation Measures

Methods of Analysis

Consistent with the California Office of Planning & Research (OPR)'s *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), the VMT forecasts for transportation analysis were developed using a modified version of the 2040 Butte County Association of Governments (BCAG) travel demand forecasting (TDF) model for the proposed project and the City.

The 2040 land use assumptions include market-level development consistent with the 2016 RTP/SCS outside of the City. In the City, the model includes construction of projects listed in Table 4.13-2, development of the proposed project and 2040 development levels in other areas of the City, consistent with the 2016 RTP/SCS.

Table 4.13-2. Roadway Network Assumptions

Project Title	Implementing Agency	Project Description
SR 70 Passing Lanes (Segment 1)	Caltrans	SR 70, from 0.1 mile south of Palermo Road, to just north of Ophir Road/Pacific Heights intersection widen from 2 lanes to 4 lanes (EA 3H71U) capacity increasing portion only
SR 70 Passing Lanes (Segment 2)	Caltrans	On State Route 70, from Cox Lane to 0.1 mile south of Palermo Road widen from 2 lanes to 4 lanes (EA 3F281 & 3H720)

Table 4.13-2. Roadway Network Assumptions

Project Title	Implementing Agency	Project Description
SR 70 Passing Lanes (Segment 3)	Caltrans	On Route 70 from 0.4 mile south or east of Gridley Road to 0.3 mile south of Butte/Yuba County line, widen from 2 lanes to 4 lanes (EA 3H930 & 3F282)
Guynn Rd over Lindo Channel Bridge Project	Chico	Project is located just north of W Lindo Ave, replace existing one lane structurally deficient bridge with a new two lane bridge (Bridge No. 12C0066)
Bruce Rd Bridge Replacement Project	Chico	In Chico 0.5 miles south of Humboldt Rd on Bruce Road over Little Chico Creek. Project includes replacement of an existing 2-lane functionally obsolete bridge with a new 4-lane bridge including reconstruction of bridge approaches; new bridge incorporates a class I bicycle facility.
Bruce Rd. Widening	Chico	From Skyway to SR 32, widen Roadway (Bridge included as separate project)
Cohasset Road Widening (Airport Blvd to Eaton Rd)	Chico	Widen Cohasset Road (2 to 4 lanes) from Eaton Rd to Airport Blvd
Commerce Court Connection	Chico	From Ivy Street to Park Ave. connect existing Commerce Ct. to Park Avenue via Westfield Lane
E. 20th Street Widening	Chico	From Forest Avenue to Bruce Road widen from one lane per direction to two lanes per direction with median
Eaton Rd Widening	Chico	From Hicks Lane to Cohasset widen and extend to 4 lanes with median and new bridge at Sycamore Creek Tributary
Eaton Rd Widening	Chico	From Cohasset to Manzanita widen to 4 lanes with median
Esplanade Widening	Chico	Eaton Road to Nord Highway. Widen to 4 lanes with median. Extend median south to Shasta Ave
Mariposa Ave Connection	Chico	From Glenshire Lane to Eaton Road, add new arterial connection. one lane per direction.
Midway Widening	Chico	From Hegan Lane to Park Ave, widen road from 2 lanes to 4 lanes with a median
Notre Dame Boulevard Connection	Chico	From Little Chico Creek to E. 20th Street construct new 2 lane street and bridge at Little Chico Creek
SR 32 Widening (Segment 3)	Chico	From El Monte to Bruce Road widen from 2 to 4 lanes
SR 32 Widening (Segment 4)	Chico	From Bruce Rd to Yosemite widen from 2 to 4 lanes with signal at Yosemite
SR 99 Auxiliary Lanes (Segment 1)	Chico	From Skyway to E. 20th Street construct auxiliary lanes to the outside
SR 99 Auxiliary Lanes (Segment 2)	Chico	E. 20th to SR 32. Construct auxiliary lanes to the outside

Source: BCAG 2020 RTP/SCS Roadway Capacity Projects.

Since the BCAG model only includes Butte County, modifications were made so that model estimates of trip lengths and VMT could better represent distance traveled outside Butte County. This extra trip distance was estimated using 2012 California Household Travel Survey data (CHTS) origin-destination data and distance assigned using Google Maps network. The CHTS questions are designed to capture trip origins and destinations without regard for political boundaries. As such, they account for travel both inside and outside of Butte County. The transportation analysis uses the following VMT estimate:

- Total VMT – All vehicle-trips (i.e., passenger and commercial vehicles) assigned on the network within a specific geographic boundary (i.e., model-wide).

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Adversely affect existing or planned bicycle facilities or fail to adequately provide for access by bicycle.
- Adversely affect existing or planned pedestrian facilities or fail to adequately provide for access by pedestrians.
- Adversely affect public transit operations or fail to adequately provide for access by transit.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Generate an average total VMT per service population[1] that is 85% or more of the existing average total VMT per service population for the Region.[2]

The City has not yet adopted thresholds for VMT impacts. Therefore, this analysis applies a threshold based on guidance provided in OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), which identifies that a reduction in vehicle travel that is 15% or more below existing baseline conditions may indicate a less than significant transportation impact. A 15% reduction in VMT is shown in the Technical Advisory to both be achievable and supported by evidence connecting this level of reduction to the State's long-term emissions goals. The use of VMT is a proxy for carbon dioxide equivalents (CO2e). Therefore, the utility of VMT for the transportation analysis depends on the relationship between vehicle emissions of CO2e and VMT.

Project Impacts

4.13-1 The proposed project would generate demand for bicycle facilities.

The proposed project includes a comprehensive network of on-site bicycle facilities that would generate substantial travel by bicycle within the plan area for recreation as well as provide bicycle access to all land uses within the plan area. Further, the project would not adversely affect existing or planned bicycle facilities identified in the Chico Bicycle Plan 2019 Update (Bicycle Plan). Therefore, the project is consistent with the following goals identified in the Bicycle Plan.

[1] Service population is defined as the sum of all residents, employees, and students within the designated area.

[2] For the purposes of the VMT analysis, the region is defined as all VMT from travel in Butte County and the VMT for travel that has at least one end (origin or destination) in Butte County.

- Goal 1: Design and implement a complete bikeway network that connects people with the places they want to go, and supports bicyclists of all ages, ethnicities, incomes and abilities.
- Goal 2: Improve safety, efficiency, and comfort for bicyclists on the bikeway network.
- Goal 4: Provide and plan for bicycle facilities during land development review.
- Goal 5: Promote bicycling as a part of the multimodal transportation system.
- Goal 7: Encourage and support both recreational and utilitarian use of the bikeway network.

The City of Chico General Plan Circulation Element identifies numerous policies aimed at expanding and maintaining a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling Policy CIRC-3.1, which supports implementation of the City's Bicycle Master Plan including Action CIRC-3.1.1 the targets incorporation of bicycle facilities into private development projects; Policy CIRC-3.3 ensure new residential projects provide connections to the nearest bikeways; Policy CIRC-3.4, which includes actions to improve safety, efficiency, and maintenance of bicycle facilities.

The VESP includes numerous actions that support recreation and trip making by non-auto modes, including walking. Specifically, Action PROS 3.1 would create a network of bike and pedestrian trails to connect neighborhoods, school and commercial areas, Action C-1.2 would develop an integrated, multimodal circulation system, Action C-1.3 would promote the creation of non-vehicle trails between complementary land uses (e.g., homes, schools, and services), Action C-1.8 would promote the bicycle travel through supportive design concepts, and Action C-1.4 supports increased trail use by placing homes close to trail connections.

The project proposes adequate bicycle access by incorporating a robust bicycle network consisting of the following:

- ***Class I Paths***: Approximately five miles of paved Class I Bike Paths which would connect open space corridors with residential areas, commercial areas, and the Village Core. Multiple trailheads provide direct and convenient access to and from the community park, elementary school, and other gathering places along the western project boundary. These bike paths are intended to be used as year-round transportation and recreational corridors.
- ***Paseo Trails***: Approximately one mile of Paseo Trails is proposed. Paseo trails are transitional corridors which include context appropriate lighting and landscaping and provide connectivity between the respective residential neighborhoods as well as transitions to other land uses.
- ***Enhanced Trails***: Approximately four miles of Enhanced Trails are proposed. Enhanced trails are improved with hardened natural surfaces such as gravel or decomposed granite and promote recreation while providing connectivity to the Class I network.

The project's bike and pedestrian pathways would extend along the entire western planning area edge (about 1.3 miles from Skyway to Stilson Canyon) and would connect to the project's trail system and the Steve Harrison Memorial Bike Path. In addition, informational kiosks would be placed at key locations to provide wayfinding and educate trail users on their surroundings and key elements. Bicycle racks would also be placed throughout the VESP, specifically within the Village Core and Village Commercial areas. Overall, the project proposes over 23 miles of trails within the open space framework, excluding sidewalks, paseos and Class II bike lanes which can be used for bicycle use. Future development within the VESP would also be subject to payment of development impact fees per Municipal Code Section 3.85, which would provide additional funding for bicycle facilities in the City. Due to the project's proposed extensive bicycle network and because the project

would not adversely affect existing or planned bicycle facilities and is consistent with the Chico Bicycle Plan 2019 Update, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.13-2 The proposed project would generate demand for pedestrian facilities.

The VESP includes numerous actions that support recreation and trip making by non-auto modes, including walking. Specifically, Action PROS 3.1 would create a network of bike and pedestrian trails, Action C-1.2 would develop an integrated, multimodal circulation system, and Action C-1.4 supports increased trail use by placing homes close to trail connections.

The City of Chico General Plan Circulation Element identifies numerous policies aimed at creating complete streets and providing a safe, connected pedestrian network including Policy CIRC-1.2, which requires new development to finance and construct internal and adjacent roadway circulation improvements to mitigate project impacts; Policy CIRC-2.1, which includes developing an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles and Policy CIRC-2.2 and Action CIRC-2.2.1, which encourages greater street connectivity and efficiency for all transportation modes; Policy CIRC-3.3 and Policy CIRC-4.2 ensure new residential projects provide connections to the nearest bikeways and provides a pedestrian network in new neighborhoods.

The project proposes sidewalks along all collector and residential streets within the VESP and the project provides an extensive combination of Class I Paths and Trails, previously described, and provides an extensive and connected pedestrian network consistent with the City's goals. However, Planning Area 19 of the Specific Plan (PA-19) would gain access from Honey Run Road, which lacks sidewalks. The only pedestrian access to the rest of the plan area would be provided by nature trails that are internal to the Specific Plan and are not direct. This is considered a **significant impact**.

Mitigation Measures

Compliance with this mitigation would ensure pedestrian and bicycle access would be provided throughout the entire plan area. With this mitigation the impact is considered **less than significant.**

TRAF-1: **Bike Path/Multi-Use Trail.** Prior to the first residential building permit in Planning Area 19 (PA-19 or Equestrian Ridge) the project developer shall construct a Class I Bike Path/ Multi-use Trail on the north side of Honey Run Road from Skyway to PA-19 located approximately 0.7 miles east on Honey Run Road.

4.13-3 The proposed project would generate demand for transit facilities.

The B-Line receives funding from state sources (Transit Development Act [TDA] funds), federal sources (Federal Transportation Administration), and through fare collection. State and federal funds are generally allocated based on population, with a portion of TDA funds derived from a ¼-cent general sales tax and a sales tax on diesel fuel. Therefore, development of the proposed project would increase funding for transit, through these sources, because of population growth. Butte Regional Transit's 2019/2020 operating budget identifies proposed non-operating revenue from state and federal sources totaling about $8.6 million.

The need to extend the B-Line to serve more areas accessible to the VESP would be a function of demand and up to Butte Regional Transit as part of an evaluation of the overall transit system. As outlined above, transit routes near the proposed project generally have low demand and productivity. Therefore, excess seating and standing capacity would be available.

In order to accommodate the potential extension of transit service to serve the project, the VESP includes actions that would support and accommodate transit service. Specifically, Action C-1.6 promotes locating commercial land uses at the western edge of the plan area to facilitate public access by transit to the project's commercial land use; Action C-1.9 creates a park-and-ride lot in the western part of the project site to encourage use of transit; and Action C-1.10 addresses the placement of transit stops.

The VESP proposes bus stops that would be included in the Village Core and at the elementary school and community park with final designs and locations to be determined in coordination with BCAG at the time of improvement. In addition, a park and ride lot would also be located at the community park and would act as a hub for commuters and carpooling. The proposed project is designed to encourage and support access to transit, so it would not adversely affect public transit operations or fail to adequately provide access to transit. Therefore, this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.13-4 The proposed project would construct new roadways to serve planned growth and connect to existing transportation facilities, which could create hazards related to design features (e.g., sharp curves or dangerous intersections).

As described in Chapter 2, Project Description, the proposed project would create new roadway connections to the City's existing roadway network, including connections to E. 20th Street in the north, and Skyway and Honey Run Road in the south. The City's Code of Ordinances Title 18R – Design Criteria and Improvement Standards includes design criteria to ensure that residential subdivisions and non-subdivision public right-of-way and private street improvements are designed to meet or exceed uniform levels of sound engineering practice. The design criteria address speed, sight distance, minimum and maximum roadway grade, minimum curve radius, and lighting. As part of general engineering practice, all roadway facilities would also be designed to meet applicable industry standards from the *Caltrans Highway Design Manual* (HDM), the *California Manual on Uniform Traffic Control Devices* (CAMUTCD), and The American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*. Each development application would be subject to review and approval by the City, including the City's Fire Department which would include a review of the project's consistency with the City's design criteria to ensure safe vehicle access is provided, including for emergency vehicles. Therefore, implementation of the proposed project would not substantially increase hazards due to design features or incompatible uses and this impact is considered **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.13-5 The proposed project would require emergency access.

The VESP would include direct roadway connections to E. 20th Street, Skyway, and Honey Run Road as primary emergency access routes. Three potential secondary emergency access locations would be provided in/out of the project site by way of the Steve Harrison Memorial Bike Path (two locations) with vehicle access controlled by bollards to prevent unauthorized access, with the third from Honey Run Road just east of Skyway. Roadways and trailheads along the VESP's Class I and enhanced trail system(s) would create open space access points for emergency equipment. A fire access road is proposed in the eastern portion of the project site that would provide a north/south connection.

The Chico Fire-Rescue Department (CFD) maintains minimum requirements for emergency access, which include minimum roadway width and turning radii for fire apparatus. All roadways would be designed to meet these standards. Each subdivision and building permit application would be subject to review and approval by the City, including CFD to ensure specific roadway design and access standards are met. The CFD reviewed the project's proposed circulation plan to ensure adequate access is provided throughout the entire plan area.

The City's General Plan Safety Element identifies Action S-4.1.1, which requires the CFD to strive to obtain an initial response time of five and a half minutes or less for at least 90% of fire emergency calls in urbanized areas. The closest CFD fire station (Station 4) to the proposed project is located approximately one mile west of the project site on Notre Dame Boulevard. Emergency response time from this station would be less than five minutes to access the project site.

Therefore, implementation of the proposed project would not result in inadequate emergency access and the impact is **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.13-6 The proposed project would generate an average total VMT per service population that is 86% of the average total VMT per service population for the region.

Table 4.13-3 illustrates how total average VMT per service population of the proposed project would compare to 85% of the total average VMT per service population for the region. As shown, the proposed project would generate a total average VMT per service population lower than the region.

Table 4.13-3. VMT Thresholds

Land Use	Total Average Daily VMT[1]	Service Population[2]	Total Average VMT Per Service Population	VMT Threshold – 85% of Total Average VMT Per Service Population	VMT Threshold Exceeded?
Region	10,450,229	342,511	30.5	25.9	Yes (101% of Threshold)
Valley's Edge Specific Plan	195,538	7,487	26.1		

Source: Fehr & Peers, 2020.

Notes:
[1] Total Average Daily VMT – VMT forecasts were developed using a modified version of the Butte County Association of Governments (BCAG) travel demand forecasting (TDF) model that was developed for the preparation and analysis of the 2016 Regional Transportation Plan/Sustainable Communities Strategies. VMT occurring outside of the model area (i.e., outside Butte County) was estimated using data from the California Household Travel Survey (CHTS) to provide full accounting of VMT.
[2] Service Population – Service population includes total population, employees, and students.

The project's lower VMT per service population, relative to the regional average, is due to many factors including the following:

- ***Location*** – The VESP is located adjacent to the City of Chico, which has a lower average VMT relative to other communities in the region, in large part due to a more diverse land use mix that places jobs, goods, and service located close to where people live.
- ***Land Use Diversity*** – The VESP includes a mix of land use, including local-service commercial (Village Commercial) and an elementary school. Having commercial services and a school in close proximity to residences reduces VMT.
- ***Senior Adult Residential*** – The VESP includes 1,385 senior adult housing units (i.e., about 50% of total dwelling units). Senior adult housing generates about half of the daily trip generation of general market single family residential dwellings.
- ***Medium-High Density Residential (Multi-Family)*** – The VESP includes a higher density residential land use, with an approximate density of 18 dwelling units per acre, that is located within walking distance to the Village Core and Village Commercial land use.

The results present in Table 4.13-4 are based on VMT analysis using the modified version of BCAG's countywide travel demand forecasting model. The project's total average VMT per service population would exceed the VMT threshold by 1%. Therefore, this impact is considered **significant**.

Mitigation Measures

Mitigation measure TRAF-2 would reduce average project-generated VMT per service population by instituting a Transportation Demand Management (TDM) program to reduce external vehicle trips generated by the proposed project. Requiring a TDM program to achieve a modest reduction in project VMT is feasible because it is within the purview of future developers to implement one or more VMT-reduction measures that have been shown to be effective in academic studies.

Existing evidence indicates that the effectiveness of TDM strategies with regard to vehicle trip reduction can vary based on a variety of factors, including the context of the surrounding built environment (e.g., urban versus suburban and rural) and the aggregated effect of multiple TDM strategies deployed together. Moreover, many TDM strategies are not just site-specific, but also rely on implementation and/or adoption by private entities (e.g., elective use of carpool program by office building tenants) and by residents to use non-automobile modes to travel outside the project. Therefore, Mitigation Measure TRAF-2 includes development and implementation of a centralized TDM Plan to guide and monitor TDM Strategy implementation. Implementation of these or equally effective TDM strategies would reduce project generated VMT to a **less-than-significant level**.

TRAF-2: TDM Plan. The project developer(s) shall prepare and implement a Transportation Demand Management (TDM) Plan to guide implementation of TDM strategies for residential and commercial development, as outlined below, to achieve a reduction in total VMT per service population of at least 1%.

(a) ***Travel Demand Management (TDM) Plan*** – Prior to approval of the first Tentative Map or Use Permit, the project developer(s) shall develop a TDM program for the entire specific plan and shall submit the TDM program to the City of Chico Department of Public Works for review and approval. The TDM program shall be designed to reduce project generated VMT such that the project achieves a VMT/Service Population ratio of 25.9 or better, and to guide implementation of TDM strategies by individual residential and commercial development. The TDM may include off-site VMT reduction measures that would reduce VMT for other service populations within the City to achieve a portion of the 1,288 miles per day, or other regional strategies such as an impact fee program or a VMT mitigation bank/exchange.

(b) ***TDM Plan Implementation (Residential)*** – Prior to approval of each Tentative Map, developers of individual residential projects shall demonstrate compliance with the TDM Plan by submitting an implementation strategy report to the City of Chico Department of Public Works for review and approval that implements TDM strategies TRT-3, TRT-5, and TRT-7, or other strategies in the table below from the California Air Pollution Control Officers Association (CAPCOA) strategies, or other quantifiable strategies that are supported by substantial evidence to be implemented to reduce project generated VMT.

CAPCOA Strategy		
Category	*Measure/Grouping*[1]	*Strategy Description*
Land Use/Location	LUT-5	Increase Transit Accessibility
	LUT-7	Orient Project Toward Non-Auto Corridor
	LUT-8	Locate Project near Bike Path/Bike Lane
	LUT-9	Improve Design of Development
Neighborhood Site Enhancements	SDT-1	Provide Pedestrian Network Improvements
	SDT-2	Provide Traffic Calming Measures
	SDT-5/LUT-9	Incorporate Bike Lane Street Design (on-site)
	SDT-7/LUT-9	Provide Bike Parking in Multi-Unit Residential Projects
	SDT-9/LUT-9	Dedicate Land for Bike Trails
Parking Policy/ Pricing	PDT-1	Limit Parking Supply
	PDT-2	Unbundle Parking Cost from Property Cost
	PDT-4/PDT-1-3	Require Residential Area Parking Permits
Commute Trip Reduction	TRT-3	Provide Ride Sharing Programs
	TRT-4	Implement Subsidized or Discounted Transit program
	TRT-5/TRT-1-2	Provide End of Trip Facilities
	TRT-7	Implement Commute Trip Reduction Marketing
	TRT-8/TRT-1-2	Implement Preferential Parking Permit Program
	TRT-9	Implement Car-Sharing Program
	TRT-10	Implement School Pool Program

CAPCOA Strategy		
Category	*Measure/Grouping*[1]	*Strategy Description*
	TRT-13	Implement School Bus Program
Transit System	TST-5/TST-3-4	Provide Bike Parking Near Transit
Road Pricing/ Management	RPT-4	Install Park-and-Ride Lots Near Transit Stops

Sources: Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010, Fehr & Peers, 2020.

(a) ***TDM Plan Implementation (Non-Residential)*** – Prior to approval of each Use Permit, developers of individual non-residential projects shall demonstrate compliance with the TDM Plan by submitting an implementation strategy report to the City of Chico Department of Public Works for review and approval that implements the TDM strategies (TRT-3, TRT-5, and TRT-7), or other strategies shown in the table below from the California Air Pollution Control Officers Association (CAPCOA) strategies, or other quantifiable strategies that are supported by substantial evidence to be implemented to reduce project-generated VMT.

CAPCOA Strategy		
Category	*Measure/Grouping*[1]	*Strategy Description*
Land Use/Location	LUT-5	Increase Transit Accessibility
	LUT-7	Orient Project Toward Non-Auto Corridor
	LUT-8	Locate Project near Bike Path/Bike Lane
	LUT-9	Improve Design of Development
Neighborhood Site Enhancements	SDT-1	Provide Pedestrian Network Improvements
	SDT-2	Provide Traffic Calming Measures
	SDT-5/LUT-9	Incorporate Bike Lane Street Design (on-site)
	SDT-6/LUT-9	Provide Bike Parking in Non-Residential Projects
	SDT-9/LUT-9	Dedicate Land for Bike Trails
Parking Policy/ Pricing	PDT-1	Limit Parking Supply
	PDT-2	Unbundle Parking Cost from Property Cost
	PDT-3	Implement Market Price Public Parking (On-Street)
	PDT-4/PDT-1-3	Require Residential Area Parking Permits
Commute Trip Reduction	TRT-1	Implement Voluntary Commute Trip Reduction Programs
	TRT-3	Provide Ride Sharing Programs
	TRT-4	Implement Subsidized or Discounted Transit program
	TRT-5/TRT-1-2	Provide End of Trip Facilities
	TRT-6	Encourage Telecommuting and Alternative Work Schedules
	TRT-7	Implement Commute Trip Reduction Marketing
	TRT-8/TRT-1-2	Implement Preferential Parking Permit Program
	TRT-9	Implement Car-Sharing Program
	TRT-11	Provide Employer-Sponsored Vanpool/Shuttle
	TRT-14	Price Workplace Parking
	TRT-15	Implement Employee Parking “Cash-Out”

CAPCOA Strategy		
Category	*Measure/Grouping*[1]	*Strategy Description*
Transit System	TST-5/TST-3-4	Provide Bike Parking Near Transit
Road Pricing/ Management	RPT-4	Install Park-and-Ride Lots Near Transit Stops

Sources: Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010, Fehr & Peers, 2020.

Implementation of the following TDM strategies would reduce the VESP VMT by 1.4%:

- **TRT-3 Provide Ridesharing Program** – Implement ride match programs that assist potential carpoolers in finding other individuals with similar travel routes.
- **TRT-5 Provide End-of-Trip Bicycle Facilities** – Install and maintain end-of-trip facilities for employee and visitor use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers.
- **TRT-7 Implement Commute Trip Reduction Marketing Strategy**– Implement a marketing strategy to promote project employers' commute trip reduction programs. The marketing strategy must include and on-site or online commuter information service, employee transportation coordinators, on-site or online transit pass sales, and guaranteed ride home services.

Cumulative Impacts

OPR's Technical Advisory provides guidance to practitioners regarding VMT analysis under cumulative conditions. Specifically, for projects analyzed using a VMT efficiency metric (such as was performed in this study), the following statement is made: "A project that falls below an efficiency-based threshold that is aligned with the long-term environmental goals and relevant plans would have no cumulative impacts distinct from the project impact. Accordingly, a finding of less-than-significant project impact would imply a less than significant cumulative impact, and vice versa".

Impacts related to inadequate emergency access and conflicts with transit, bicycle or pedestrian transportation would be identical to the impacts described in the project impacts section; therefore, they are not repeated in the cumulative impacts evaluation. The project would not make a cumulatively considerable contribution to inadequate emergency access or transit, bicycle or pedestrian access; therefore, all impacts would be less than significant.

4.13.4 References

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4.14 Wildfire

4.14.0 Introduction

This section addresses potential wildfire hazards that may result from implementation of the proposed Valley's Edge Specific Plan (VESP or proposed project) and describes the existing setting of the project site as it relates to wildfire conditions, identifies associated regulatory requirements, evaluates potential impacts, and identifies feasible mitigation measures. Potential wildfire impacts resulting from construction and operation of the proposed project were evaluated based on a review of existing resources, data, and applicable laws, regulations, guidelines and standards. This section focuses on the effect of the proposed project on wildfire risk. Fire protection services for the proposed project are addressed in Section 4.11, Public Services.

Comments received in response to the Notice of Preparation (NOP) include: the wildfire evacuation history and projections of Chico's foothill projects; the value of maintaining a backfire burnable buffer between the wildfire-prone foothills and the Chico Urban Area versus developing an urban area in the wildland-urban interface (WUI) area; the topographical influence to fire behavior; and increased population in a fire-prone area. Concerns regarding the history of wildfire in the Chico area, the influence of topography on fire behavior, and an increase in population in the WUI are all addressed in this section. The specifics of fire management techniques are not addressed because these issues are outside of the scope of an EIR. A copy of the NOP and comments received is included in Appendix A.

Primary sources reviewed to prepare this section include the City of Chico 2030 General Plan and EIR, City of Chico Land Use and Development Regulations, 2008 CAL FIRE/Butte Unit Community Wildfire Protection Plan, and 2018 California Strategic Fire Plan.

4.14.1 Environmental Setting

Fire environments are dynamic systems and are influenced by many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. The three major components of fire environment are vegetation (fuels), climate, and topography. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a wildfire. In addition, the type, location, and intensity of a wildfire can affect wildlife, vegetation, air quality, water quality, and slope stability to varying degrees, as discussed below.

A wildfire is a nonstructural fire that can occur in undeveloped areas and spread to urban areas where the landscape and buildings are receptive to ignition. The Urban-Wildland Interface Area or WUI is a zone of transition between wildland (undeveloped/unoccupied/"natural" land) and urban development. Communities adjacent to WUI areas are at a higher risk for wildfire occurrence. In Butte County, the foothills and mountainous region of the northern Sierra Nevada and southern Cascade Mountains comprise the eastern portion of the County developed with rural residences and communities intermixed amongst woodland fuels creating a serious risk (CAL FIRE 2013). Steep hillsides and varied topography can also contribute to the risk of wildland fires. In the City, the WUI encompasses areas that border wide open grasslands, riparian forests and oak woodlands, which would include the project site.

Fires that occur in WUI areas may affect natural resources as well as life and property. The project site is located in the WUI of Butte County.

Understanding the fire environment on and adjacent to the proposed project site is necessary to understand the potential for fire to occur within and around the project site. The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). The CAL FIRE maps identify different fire hazard severity zones (FHSZ) based on a hazard scoring system that could result in catastrophic losses using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather. CAL FIRE does not have responsibility for densely populated areas, incorporated cities, agricultural lands, or lands administered by the federal government. Areas where CAL FIRE is responsible for wildland fire protection includes lands owned or managed by the state or where the state is financially responsible for the prevention and suppression of wildfires, classified as a State Responsibility Area (SRA). In areas where local fire protection agencies are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). CAL FIRE also maps and ranks areas of fire threat, which indicates the level of fire threat based on the potential fire behavior (fuel rank) and expected fire frequency (fire rotation) at a given location (CAL FIRE 2005). The project site has been identified as a Moderate fire hazard area within the SRA but is also within the incorporated LRA overlay (CAL FIRE 2007). Figure 4.14-1 shows the FHSZ in the project vicinity. The project site is currently under the jurisdiction of CAL FIRE but after approval of the VESP, it would be folded into the jurisdiction of the Chico Fire Department (CFD).

The following provides more information regarding the fire environment associated with the proposed project and potential environmental effects of a wildfire burning on or near the proposed project site.

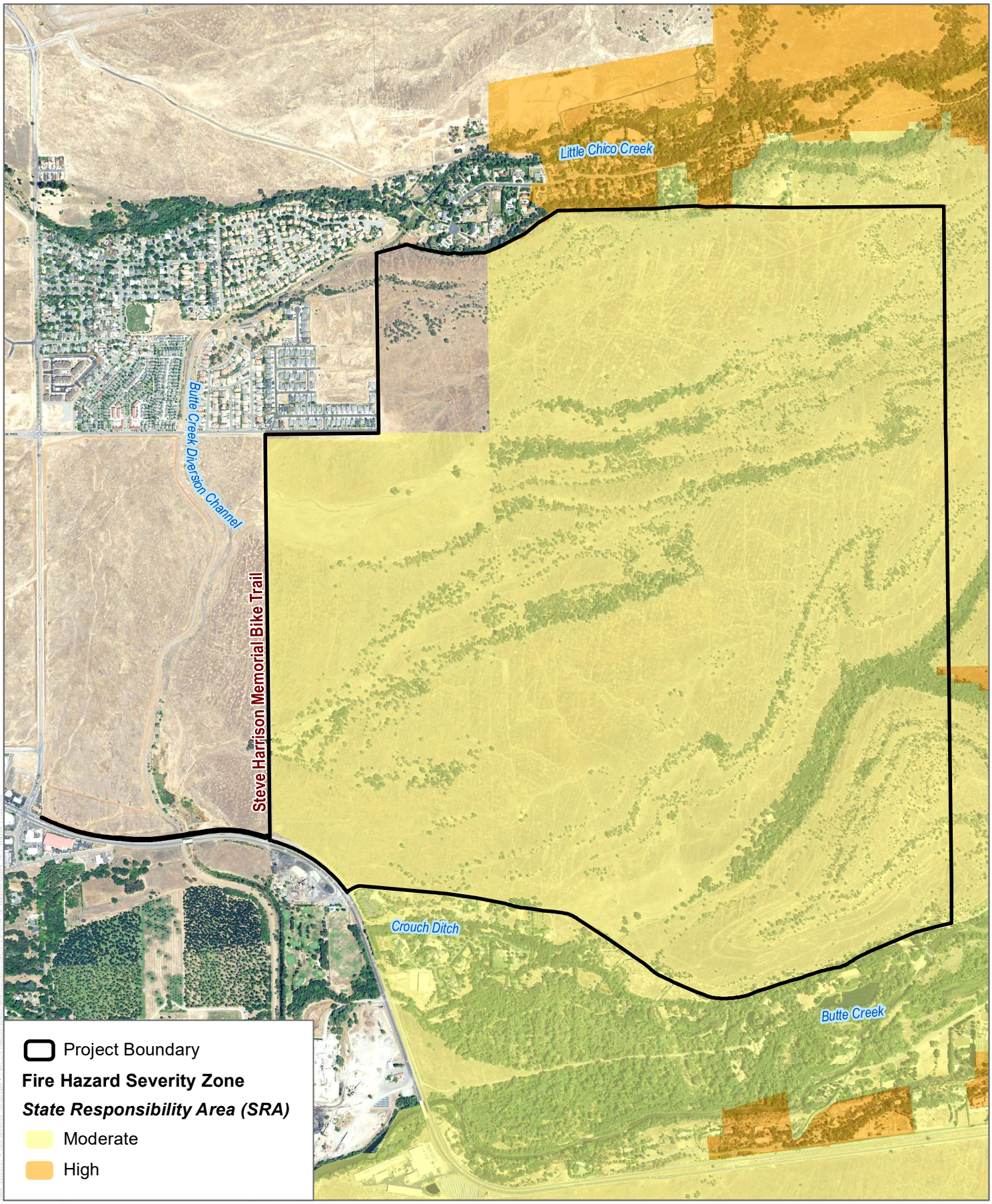
Vegetation/Fuels

As described in Section 4.3, Biological Resources, there are three vegetation communities and two land cover types on the project site: annual grassland, blue oak foothill pine woodland, valley foothill riparian woodland, riverine, and barren, as shown in Table 4.14-1.

Table 4.14-1. Existing Vegetation Types within the Project Site

Vegetation Community or Land Cover Type	Acreage
Vegetation Communities	
Annual Grassland	939.8
Blue Oak Foothill Pine Woodland	485.7
Valley Foothill Riparian Woodland	13.0
Other Land Cover	
Riverine	11.2
Barren	1.0
Total	1,450.7

Source: Appendix C.



SOURCE: ESRI 2019, Gallaway 2017, Cal FIRE 2008

DUDEK

0 750 1,500 Feet

FIGURE 4.14-1

Fire Hazard Severity Zones

Valley's Edge Specific Plan Project

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As shown in Figure 4.3-1, in Section 4.3, Biological Resources, annual grasslands cover the majority of the project site. Valley foothill riparian woodland mainly follows along Comanche Creek in the southern portion of the site, while blue oak foothill pine woodland is located throughout the site in concentrated "fingers". Fire damage from the Camp Fire to the blue oak foothill pine woodland within the project site was concentrated within the eastern portion of the project site. Although fire damage did occur to individual trees within the blue oak foothill pine woodland areas within the project site, the understory vegetation has remained largely unchanged.

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, grass-dominated plant communities become seasonally prone to ignition and produce lower intensity, higher spread rate fires. Additionally, fire is an expected element within the blue oak foothill pine habitat type in California, with fires typically occurring every 5 to 15 years in this habitat type.

Another important factor is the dynamic nature of vegetation communities. The frequency of fire events in undeveloped areas can create varying cycles or regimes. In addition, fire disrupts plant succession. For example, high frequency fires tend to convert shrublands to grasslands or maintain grasslands. Conversely, where fire does not occur for long periods of time, grasslands can be converted to shrublands over time. In general, biomass and associated fuel loading will increase over time, assuming that disturbance (fire, farming, or grading) or fuel reduction efforts are not implemented. It is possible to alter successional pathways for varying plant communities through manual alteration or thinning/selective harvesting of plant matter and trees. The annual grassland habitat has adapted to frequent burnings and the blue oak foothill pine woodland typically has a fire regime of five to fifteen years. Fuels on the project site include grasslands that dry out during the summer months and the foothill pine woodland that is considered more flammable than the more fire-resistant oak trees. Seasonal grazing has helped to minimize the amount of fuel on the site by maintain the annual grasslands on the site.

Overhead Infrastructure

Overhead 110 and 250 kilovolt (kV) Pacific Gas & Electric (PG&E) transmission lines are present within the project site. Transmission lines enter the property north of the E. 20th Street project entrance and continue southeasterly through the VESP area toward the southern boundary along Honey Run Road. A secondary overhead PG&E line enters the project site along the western project boundary at the intersection of Skyway and the project's primary entrance, travels southeast until encountering the main line, and continues through the project site to the east. These overhead lines would remain unchanged. Electric power lines and poles are located within a 140-foot wide easement along the main line and do not cross proposed residential parcels. The secondary line is located within a 40-foot wide easement. This easement traverses through the project's proposed residential land use areas but maintains the easement from individual parcels and will be delineated and avoided in future subdivision mapping. When power lines or the equipment attached to them is damaged or downed, wires may come into contact with combustible materials such as trees, resulting in fire. Unmanaged tree grown near overhead power lines can also result in contact of combustible materials with power lines, resulting in fire.

Climate and Weather

Climate change is expected to influence existing fire-related hazards and vulnerabilities. Consequences of a changing climate include changing precipitation patterns, reduced water supply, and increased hazards such as heat waves and wildfire (Butte County 2014). Changes in precipitation (rain and snowfall), humidity, and temperature have the cumulative effect of increasing conditions where wildfires could occur with greater frequency and severity. According to the County's Climate Action Plan, Butte County has a large potential wildfire fuel source as well as homes, infrastructure, and business located within the wildland-urban interface (Butte County 2014). In addition, according to the Center for Climate and Energy Solutions, drier vegetation and drought conditions have contributed to a doubling of large fires in the western states between 1984 and 2015, with projections indicating that a 1 degree increase in temperature could result in a substantial increase in fires due to warmer temperatures and drier conditions that help fires spread and make them harder to extinguish (CES 2020).

As described in Section 4.2, Air Quality, the project site is located within the Sacramento Valley Air Basin (SVAB). Hot dry summers and mild rainy winters characterize the Mediterranean climate of the valley. Temperature may range from a low of 20°F to a high of 115°F, with summer highs usually in the 90s and winter lows occasionally below freezing. The high average summer temperatures, combined with very low relative humidity, produces hot, dry summers that contribute to ozone buildup. Average annual rainfall is approximately 20 inches, with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist, clean breezes from the south and southeast to dry land flows from the north (SMAQMD 2019). These conditions combine to create a 'fire season' in the region, wet warm winters allow for abundant forage growth, and hot dry summers quickly kill green grasslands into readily dry fuel for wildfires in the fall.

Jarbo Gap Winds

The Jarbo Gap winds are a locally named wind phenomenon resulting from winds blowing through the Feather River Canyon in Plumas County. The winds travel down the canyon from the northeast every fall, caused by high-pressure air over the Great Basin seeking a path through the Sierra Nevada to the low-pressure voids on the California coast (St. John et. al 2018). The 2018 Camp Fire began north of the Town of Pulga near the Jarbo Gap in Feather River Canyon and moved southwest through Butte County towards the Town of Paradise and the City, which are in the path of these winds.

Topography

As described in Section 4.6 Geology and Soils, the proposed project site is characterized by gentle to moderately sloping terrain generally descending to the west-southwest. The majority of the site ranges in elevation from 300 to 500 above mean sea level with slope gradients of less than 5% throughout the majority of the site and 5 to 15% along the side-slopes of the creek drainages. There are steeper slopes where outcrops of volcanic rock protrude in thin strips along the edges of Little Chico Creek, Comanche Creek, and Butte Creek. Topographical variations affect how wildfire can traverse an area. Fire spreads faster going up slopes. The proposed project would develop in the flatter areas of the project site and would reserve the steeper slopes as defensible either open space or park space.

Fire History

CAL FIRE's Fire and Resource Assessment Program (FRAP) assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative fire management and policy guidelines. Much of the project site and the surrounding area was burned during the Camp Fire. The FRAP lists

290 occurrences of wildfires in Butte County between 1911 and 2018. Table 4.14-2 below shows the number of occurrences for each cause of fire (CAL FIRE 2018a). From 1911 to 2007, the average number of fires per year was approximately 2.6. From 2008 to 2018, the average number of fires increased to 3.25 per year. This is an increase of approximately 25%.

Table 4.14-2. Number of Wildfire Occurrences per Cause in Butte County (1911-2018)

Cause of Wildfire	Wildfire Occurrences (1911 – 2007)	Wildfire Occurrences (2008-2018)
Lightning	19	14
Vehicle	4	3
Powerline	2	8
Firefighter Training	1	0
Aircraft	1	0
Escaped Prescribed Burn	0	4
Equipment Use	8	11
Smoking	1	0
Campfire	3	0
Debris	10	3
Railroad	4	0
Arson	7	7
Playing with Fire	0	2
Miscellaneous[1]	43	7
Unknown/Identified	122	6
Total	**225**	**65**

Source: Fire and Resource Assessment Program, CAL FIRE 2018.
Notes:
[1] Fire ignited by events or activities that are not classified as arson, campfire, debris burning, equipment use, lightning, playing with fire, powerline, railroad, smoking, vehicle, undetermined, or other included categories. This category includes fires caused by explosive devices, fireworks, glass refraction, shooting, spontaneous combustion, and others (CAL FIRE 2019a).

Camp Fire

The 2018 Camp Fire was the deadliest and most destructive fire in California history. The Camp Fire was caused by a powerline failure. It spanned 153,336 acres in Butte County and was active for 17 days, destroying 18,804 structures, mostly in the Town of Paradise. The fire resulted in 85 fatalities, including civilians and fire personnel (CAL FIRE 2019b). The fire began just north of the Town of Pulga near the Feather River Canyon, and traveled through Pulga and Concow, reaching the eastern outskirts of Paradise within a matter of hours. Embers then spread to the north into Magalia, and over the Town to the west into Butte Creek Canyon. The fire also spread to the eastern and northeastern portion of the project site (CAL FIRE 2018b). The number of acres burned is not known.

Adjacent Land Uses

Land uses adjacent to the project site include rural Stilson Canyon, a largely developed area comprised of estate lot single-family homes both within the City limits and in unincorporated Butte County to the north. The northwest corner of the project site is adjacent to a newer single-family neighborhood along E. 20th Street, which is within the city. The western portion is the site is bounded by the Steve Harrison Memorial Bike Path with the adjacent recently entitled Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone project (Stonegate project) located on the west side of the bike path. An open space area is located between the Stonegate project and the bike path. The Stonegate project includes a mix of single-

family residential, multi-family residential, commercial uses, parks, open space, and public right-of-way. Lands to the east, within the unincorporated County, are undeveloped and have historically been used for grazing. The southern portion of the site is bordered by Skyway Road and Honey Run Road. Land uses along Skyway Road include an asphalt production plant, a small solar array, and other small light industrial uses and undeveloped parcels. Land uses along the south side of Honey Run Road consist primarily of single-family homes on large parcels ranging from 1.6-acres to 15-acres, within the County.

Fire Protection

The Chico Fire Department (CFD), also known as City of Chico Fire-Rescue, provides fire protection services and first responder life support for the city. CFD provides fire suppression, fire prevention, technical rescue, hazardous materials mitigation, first responder basic life support and advanced life support services. Total staffing of CFD consists of 51 full-time firefighters and 6 volunteer firefighters. Current operating stations include Fire Stations 1, 2, 4, and 5. Fire Station 4 located at 2405 Notre Dame Boulevard is the closest fire station to the project site, located less than one mile west. CFD crew staffed at Fire Station 4 are able to access the site quickly from Notre Dame Boulevard to Skyway Road. Fire Station 4 possesses a Type III Wildland Engine, specifically designed to fight fires in the urban-wildland interface. Fire services in Chico are also supported by the North Division Battalion of the Butte County Fire Department. Battalion 4 includes the City of Chico, the community of Durham, portions of Butte Valley, and the surrounding foothills.

The City is also part of the California Disaster and Civil Defense Master Mutual Aid Agreement, which states that all resources and facilities of the state, including all political subdivisions, shall voluntarily aid and assist each other in the event of a disaster by the interchange of services including fire protection (CalOES 1950). The Butte Emergency Command Center is the mutual aid coordination center for Butte County. They have the responsibility for coordinating all fire mutual aid requests in Butte County and have the authority to directly obtain resources from neighboring counties including Yuba, Sutter, Plumas, Glenn, Colusa, Tehama, and Lassen (Butte County 2018). The City is also signatory to the Chico Urban Area Fire and Rescue Agreement, which provides for closest engine response to all emergencies, regardless of jurisdiction, within the designated service area (including areas outside the city's Sphere of Influence). The City has a mutual aid agreement with CAL FIRE in mutual threat zones, which are geographical areas on both sides of the political boundaries between the city and a SRA, where a wildland fire would threaten both jurisdictions (Butte LAFCO 2018).

4.14.2 Regulatory Setting

Federal Regulations

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995, updated in 2001, and again in 2009, by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgement of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy and its implementation are founded on the following guiding principles:

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.

- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

International Fire Code

Created by the International Code Council, the International Fire Code is not a federal regulation but provides important guidance regarding a wide array of conditions hazardous to life and property including fire, explosions, and hazardous materials handling or usage. The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to incorporate into the building and design of new structures or improvement of existing structures in order to protect life and property (often times these measures include construction standards, specialized equipment, and performance requirements). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted.

International WUI Code

The International WUI Code is published by the International Fire Code and is a model code intended to supplement a City or County's building and fire codes. The objective of the code is to establish minimum regulations for the safeguarding of life and property from the intrusion of fire from wildland fire exposures and fire exposures from adjacent structures, and to prevent structure fires from spreading to wildland fuels, even in the absence of fire department involvement.

State Regulations

Emergency Response/Evacuation Plans

The state of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Building Code

Chapter 7A of the California Building Code (CBC) applies to building materials, systems and/or assemblies used in the exterior design and construction of new buildings located within a WUI Fire Area. The purpose of this chapter is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any FHSZ within SRAs or any WUI Fire Area to resist the intrusion of flames or

burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. New buildings located in such areas must comply with the ignition resistant construction standards outlined in Chapter 7A.

In addition, Section R313 of the 2010 Residential Building Code requires all newly constructed one- and two-family dwellings and townhouses to be equipped with an automatic fire sprinkler system.

California Fire Code

The California Fire Code (CFC) is contained within Title 24, Chapter 9 of the California Code of Regulations (CCR). Based on the International Fire Code, the CFC is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the CFC and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. The CFC states in Section 903.2 that approved automatic sprinkler systems in new buildings and structures are required based on the occupancy group classification. This includes areas of assembly (i.e., community halls, restaurants, movie theaters, and churches), educational buildings, institutional buildings, factory and industrial buildings, mercantile uses (including markets and retail stores), and certain residential uses such as apartment buildings and residential care facilities.

California Department of Forestry and Fire Protection

CAL FIRE protects the people of California from fires, responds to emergencies, and protects and enhances forest, range, and watershed values providing social, economic, and environmental benefits to rural and urban citizens. The Office of the State Fire Marshal supports CAL FIRE's mission by focusing on fire prevention. It provides support through a wide variety of fire safety responsibilities including by regulating buildings in which people live, congregate, or are confined; by controlling substances and products which may, in and of themselves, or by their misuse, cause injuries, death, and destruction by fire; by providing statewide direction for fire prevention in wildland areas; by regulating hazardous liquid pipelines; by reviewing regulations and building standards; and by providing training and education in fire protection methods and responsibilities.

California Public Resources Code

Public Resource Code 4290 requires minimum fire safety standards related to defensible space that are applicable to state responsibility area lands and lands classified and designated as very high fire hazard severity zones.

Public Resource Code 4291 requires a reduction of fire hazards around buildings, requiring 100 feet of vegetation management around all buildings, and is the primary mechanism for conducting fire prevention activities on private property within CAL FIRE jurisdiction.

Fire Hazard Severity Zoning

CAL FIRE mapped FHSZs in Butte County based on fuel loading, slope, fire weather, and other relevant factors, as directed by Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189. FHSZs are ranked from moderate to very high and are categorized for fire protection within a SRA, or LRA under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively. The project site is designated as a moderate fire severity zone within a SRA. Upon project approval, the project area would be added to the responsibility area or LRA of the Chico Fire Department.

California Strategic Fire Plan

The 2018 Strategic Fire Plan (Fire Plan) for California is a cooperative effort between the State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The Fire Plan reflects CAL FIRE's focus on (1) fire prevention and suppression activities to protect lives, property, and ecosystem services, and (2) natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. It describes a vision for a natural environment that is more fire resilient; buildings and infrastructure that are more fire resistant; and a society that is more aware of and responsive to the benefits and threats of wildland fire; all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2018b). Fire Plan goals include the following:

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.
2. Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire, and (b) individual landowner objectives and responsibilities.
3. Support and participate in the collaborative development and implementation of local, county and regional plans that address fire protection and landowner objectives.
4. Increase fire prevention awareness, knowledge and actions implemented by individuals and communities to reduce human loss, property damage and impacts to natural resources from wildland fires.
5. Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
6. Determine the level of resources necessary to effectively identify, plan and implement fire prevention using adaptive management strategies.
7. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
8. Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

Senate Bill 1241

In 2012, SB 1241 added Section 66474.02 to Title 7 Division 2 of the California Government Code, commonly known as the Subdivision Map Act. The statute prohibits subdivision of parcels designated very high fire hazard, or that are in a SRA, unless certain findings are made prior to approval of the tentative map. The statute requires that a county legislative body make three new findings regarding fire hazard safety before approving a subdivision proposal. The three findings include: (1) the design and location of the subdivision and if lots are consistent with defensible space regulations found in PRC Section 4290-91, (2) structural fire protection services will be available for the subdivision through a publicly funded entity, and (3) ingress and egress road standards for fire equipment are met per any applicable local ordinance and PRC Section 4290. The project site is currently within a SRA and, upon annexation, would be transferred into a LRA.

Field Act

Under the Field Act, the Department of General Services (DGS) is required to supervise the design and construction, reconstruction, or alteration of any school buildings to ensure that the plans and specifications are in compliance with adopted rules, regulations, and building standards for the protection of life and property, including Title 5 of the California Code of Regulations. Within the DGS, the Division of the State Architect (DSA) is responsible for design and construction oversight for K-12 schools to ensure application of the California Building Code (CBC), pursuant to the Field Act. Additionally, the DSA promotes compliance with all relevant structural, accessibility, and fire and life safety codes.

Senate Bill 99 (Section 65302 of the Government Code)

State Planning and Zoning law requires that each city or county adopt a comprehensive general plan that includes a safety element to address hazards such as flooding and wildfire risks. It also requires the development of emergency and evacuation routes, and updates on a specific schedule of not less than 8 years. Senate Bill 99 requires all cities and counties, upon revision of the housing element on or after January 1, 2020, to review and update the safety element to include information identifying residential developments in hazard areas that do not have at least two emergency evacuation routes.

Electric Tariff Rule 20

The California Public Utilities Commission (CPUC) instituted the current utilities undergrounding program in 1967. It consists of two parts. The first part, under Tariff Rules 15 and 16, requires new subdivisions (and those that were already undergrounded) to provide underground service for all new connections. The second part of the program, under Tariff Rule 20, governs both when and where a utility may convert overhead lines to underground facilities, and who shall bear the cost of the conversion (CPUC 2020a).

Rule 20 provides three levels, A, B, and C, of progressively diminishing ratepayer funding for the projects. Approximately 35-40 miles of overhead lines are converted each year to underground through Rule 20 Sections A, B, and C. Rule 20A projects are constructed in areas of a community that are used most often by the general public. Rule 20A projects are nominated by the city or county and are paid for by the electric utility ratepayers. Because ratepayers contribute the bulk of the costs of Rule 20A programs through utility rates, the projects must be in the public interest by meeting one or more of the following public interest criteria (CPUC 2020a):

- Eliminate an unusually heavy concentration of overhead lines;
- Involve a street or road with a high volume of public traffic;
- Benefit a civic or public recreation area or area of unusual scenic interest;
- Be listed as an arterial street or major collector as defined in the Governor's Office of Planning and Research (OPR) Guidelines.

As of June 2020, there are three Rule 20A projects in Chico at North Esplanade, Warner Street, and Bruce Road between Highway 32 and E. 20th Street (CPUC 2020b).

Local Regulations

The Butte County Fire Department (BCFD) and CAL FIRE provide fire protection throughout Butte County, including the project site. Through an established cooperative agreement, CAL FIRE and the BCFD function together as a fully consolidated fire protection agency. The VESP site is proposed to be annexed to the City of Chico, which would bring the site under the jurisdiction of the CFD to provide fire protection and emergency response services for the Specific Plan area.

The City of Chico and Butte County have both adopted Emergency Response Plans, which include prearranged emergency response procedures and mutual aid agreements for emergency assistance with CAL FIRE and surrounding cities. Emergency routes for evacuation of Chico are Highway 99 and Highway 32.

Emergency Response Plans

Operations Planning

The Butte County Emergency Operations Plan (EOP) assigns functions and tasks consistent with California's Standardized Emergency Management System and the National Incident Management System. The EOP provides direction on how to mobilize and respond to an emergency from onset to recovery (Butte County 2011). The City has established a number of agreements and procedures regarding response to emergency situations. This includes standard emergency response procedures in line with the CalOES Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters and mutual aid agreements for emergency assistance. These emergency response measures are included in the Butte County EOP, such as established roles for command/management, communication protocols, and establishment of priorities for resource allocation (Butte County 2011). The EOP establishes the emergency management organization needed to mitigate any significant emergency or disaster, identifies the roles and responsibilities required to protect the health and safety of Butte County residents and property, and establishes the operational procedures associated with field response to emergencies (Butte County 2011).

Hazard Mitigation

The Butte County Local Hazards Mitigation Plan (LHMP) was prepared to reduce risks for hazards by helping decision makers direct mitigation activities and resources. The LHMP includes the strategies the County would use to increase resiliency in the face of hazardous situations. This multi-jurisdictional plan includes Butte County, the cities of Biggs, Chico, Gridley, Oroville, and the Town of Paradise, as well as a number of public utilities and services agencies serving the area. According to the LHMP's Hazard Identification Assessment, one of the most significant hazards in the county is wildfire (Butte County 2019).

CAL FIRE Butte Unit Community Wildfire Protection Plan

The 2008 CAL FIRE/Butte Unit Community Wildfire Protection Plan (CWPP) (CAL FIRE 2013) incorporated the needed elements of the CAL FIRE's Fire Plan responsibilities for each unit within its essential make up. The Plan includes an assessment of the fire situation within the jurisdiction of the Butte Unit, stakeholder contributions and priorities, and strategic targets for pre-fire solutions developed by people who reside and work in the local fire problem area. The Butte Unit CWPP is designed to achieve the goals and objectives of the Strategic Fire Plan for California under the direction of the Unit's Pre-Fire Engineer. The Plan recommends using fire resistive building construction and 100 feet of defensible space around homes.

City of Chico 2030 General Plan

The proposed project is subject to relevant goals, policies, and actions listed in the City of Chico 2030 General Plan. Goals, policies, and actions related to fire management are included below.

Safety Element

Goal S-4: Continue to provide effective and efficient fire protection and prevention services to Chico area residents.

Policy S-1.1 (Emergency Preparedness) – Promote public safety from hazards that may cause death, injury, or property damage through emergency preparedness and awareness.

Action S-1.1.1 (Emergency Plan Maintenance) – Maintain, and update as needed, the City's Emergency Plan to guide emergency management in the City.

Action S-1.1.2 (Emergency Response Awareness) – Promote community preparedness for hazards and awareness of emergency notification methods.

Action S-1.1.3 (Incident Training) – Continue to participate in the Federal Emergency Management Agency's National Incident Management System program, which provides a standardized approach to emergency incidents.

Policy S-4.1 (Fire Safety Staffing) – Maintain adequate fire suppression and prevention staffing levels

Action S-4.1.1 (Fire Response Time) – Strive to obtain an initial response time of five and a half minutes or less for at least 90 percent of fire emergency response calls in urbanized areas

Policy S-4.2 (Interagency Coordination) – Continue to maintain interagency relationships to maximize fire protection services and support programs that reduce fire hazards.

Action S-4.2.1 (Interagency Programs) – Continue to work with CalFire and the Butte County Fire Department on programs that will enhance fire protection and firefighting capabilities in the Planning Area, including maintaining aid agreements.

Policy S-4.3 (Fire Safety Standards and Programs) – Support the development and implementation of standards and programs to reduce fire hazards and review development and building applications for opportunities to ensure compliance with relevant codes.

Action S-4.3.1 (Standards to Protect Structures) – Maintain, and update as needed, the standards manual for protecting structures in wildland fire areas.

Action S-4.3.2 (Structural Standards) – Incorporate building construction standards for the Local Resource Area (areas which are provided City fire suppression services) that are consistent with the requirements for the State Responsibility Areas (areas that are provided State and County fire suppression services) designated as Very High, High, and Moderate Fire Hazard Severity Zones.

Action S-4.3.3 (Project Design) – As part of the project review process in wildland fire areas, require consideration of emergency evacuation routes and defensible buffer areas.

Action S-4.3.4 (Development Standards) – Encourage the County to require development in unincorporated areas within the City's Sphere of Influence to conform to the City's development standards.

Action S-4.3.5 (Fire Sprinklers, New Structures) – Consider adoption of an ordinance that exceeds state standards requiring automatic fire sprinklers in new non-residential construction.

Policy S-4.4 (Vegetation Management) – Support vegetation management and weed abatement programs that reduce fire hazards.

City of Chico Emergency Response Plan

The City of Chico has adopted Emergency Response Plans which include prearranged emergency response procedures and mutual aid agreements for emergency assistance within the Planning Area. Designated emergency routes for evacuation within the City are Highway 99 and Highway 32. The General Plan provides multiple policies under Goals S-1, S-2, and S-3 (provided above) to minimize the loss of life and property resulting from natural and human-caused hazards.

Policy S-1.1 (Emergency Preparedness) – Promote public safety from hazards that may cause death, injury, or property damage through emergency preparedness and awareness.

Policy S-1.2 (Adaptation to Climate Change) – Support public education, adaptation, and emergency response services in response to the potential long term impacts of climate change.

Valley's Edge Specific Plan

The VESP includes several goals and actions related to wildfire management in Chapter 3, Parks, Recreation and Open Space; Chapter 4, Land Use: Firewise Guidelines, Standards and Vegetation Management Standards; and in the Design Guidelines, which are listed below. These policies and actions would direct development and future buildout of all phases of the project.

Chapter 2 Guiding Goals and Principles

Section 2.3.1 Chapter 3: Parks, Recreation and Open Space

Goal PROS-4: Preserve Natural & Environmental Resources and Restore Sensitive Habitat: Utilize "avoidance by design" strategies and open space to preserve sensitive habitat, safeguard natural drainages, increase bio-diversity, provide for wildlife movement, and protect wetlands and riparian corridors previously degraded by a century of grazing.

Action PROS-4.2: Utilize native, drought tolerant, and fire-resistant landscape design and plantings in parks, streetscapes, and common areas.

Action PROS-4.3: Support the restoration of riparian areas and seasonal streambeds to improve native biodiversity and enhance potential for groundwater recharge.

Section 2.3.2 Chapter 4: Land Use

Goal LU-5: Plan, design, and create a resilient and wildfire resistive community: Implement a range of programs and practices for firefighter safety, community planning, landscaping, construction, and maintenance to protect people, property, and natural resources from wildland fire.

Action LU-5.1 – Directly consult with the City of Chico Fire Department (CFD) in the development of the VESP's firewise guidelines, building standards, and vegetative management standards (Section 4.5).

Action LU-5.2 – Utilize the Land Use Plan (Figure 4-1) to eliminate combustible development in areas of increased wildfire risk, such as heavily vegetated areas, steep terrain, and/or dramatic topographic features.

Action LU-5.3 – Plan infrastructure accordingly to increase wildland firefighting capabilities.

Action LU-5.4 – Utilize firewise construction pursuant to Chapter 7A of the California Building Code (CBC) to reduce structure ignition threat and retardant strategies to reduce the spread of structure fires along the Wildland-Urban Interface (WUI). Refer to Figure 4-5: Wildland-Urban Interface (WUI) Perimeter.

Action LU-5.5 – Promote residential energy storage for residents to provide back-up power to critical loads during power outages.

Action LU-5.6 – Provide for the reduction of surface and ladder fuels, as well as the creation and maintenance of fire breaks as proactive measures of vegetative management that reduces the threat and spread of wildland fires.

Action LU-5.7 – Create 10' wide enhanced trail to serve as a fire break within the Regional Park along the norther boundary of the planning area abutting Stilson Canyon.

Chapter 4, Land Use Section 4.5 Firewise Guidelines, Standards & Vegetation Management Requirements

The Firewise Guidelines address wildfire risks from five distinct perspectives:

1. **Land Planning.** The VESP eliminates development in heavily forested areas, and areas with steep terrain and/or dramatic topographic features, which increase wildfire risk. The Land Use Plan creates natural landscape buffers along the northern, eastern, and southern boundaries. Land Planning also prioritized siting the Elementary School, Community Park, Village Core, and higher density residential areas along the western boundary, farthest from the WUI. Primary and secondary entrances and exits along with a series of secondary emergency access routes facilitate both firefighting and routine evacuation planning required by the Chico Fire Department.
2. **Fire Fighting Capabilities.** The incremental extension of infrastructure increases wildland firefighting capabilities. Roadways and trailheads along the VESP's Class I and enhanced trail system(s) create open space access points for emergency equipment, while trails serve as fire breaks (see Section 5.3). A recreational lake serves as a source of emergency fire water, in addition to a million-gallon water tank and a network of underground pipes deliver pressurized water to hundreds of fire hydrants increasing fire suppression capabilities (see Infrastructure Chapter 6).

3. **Fire Resistant Materials and Building Standards.** Requirements for firewise construction pursuant to Chapter 7A of the CBC apply to any and all buildings located along the WUI perimeter (Figure 4-5). Chapter 7A of the CBC dictates firewise and non-flammable material and assembly specifications for roofs, attic vents, siding, exterior doors, decking, windows, eaves, wall vents, enclosed overhanging decks and other elements. These standards ensure that homes located along the WUI are built in a way that reduces the threat of structure ignition and minimizes the spread of structure fires.
4. **Vegetative Fuel Reduction and Management.** The reduction of surface fuels[1] and ladder fuels[2] and the creation of fire breaks represent proactive management of vegetative conditions that reduce the threat and spread of wildland fires. Guidelines and requirements for proper vegetative management exists along both the urban side and the open space side of the WUI. Firewise standards also apply to the edges of development which, for some period of time, adjoin undeveloped grassland designated for development.
5. **Emergency Preparedness.** Emergency preparedness is an integral aspect of community planning and infrastructure. Programs, communication, and ongoing cooperation between residents, the HOA, Chico Fire Department and service providers such as commercial landscapers all contribute to a more fire resistive and resilient community. Multiple points of ingress and egress, designated shelter-in-place areas, signage, way finding, and secondary emergency access routes become a routine part of subdivision planning and design.

These varied perspectives form the basis of the following Firewise Guidelines, standards, and management requirements. They are organized by the entity most directly engaged in administering the activity, and or a milestone event triggering an action by an entity.

The VESP's firewise policies apply to development located along the WUI Perimeter (shown in Figure 4-5). In most instances these conditions apply to incremental edges of phased development abutting natural landscapes in areas designated for future development, referred to as the "Temporary WUI Perimeter".

Policies related to these perspectives are listed below:

Planning and Design

1. Applicants shall consult with the City of Chico Fire Department during preliminary design to ensure sufficient fire apparatus access, evacuation routes, water supply, firewise building construction pursuant to CBC Chapter 7, and other factors are considered and integrated into improvement plans.
2. Where applicable, signage shall convey street names, fire apparatus open space access points, no exit streets, maximum weight limits for bridge and culvert crossings, and mile markers along Class I and enhanced trailways (see Appendix A, A.6.4).
3. Roads shall not exceed a 12 percent grade, except in limited instances and distances in areas serving residential land uses as may be necessary to minimize grading, properly address a unique site constraint, or to accommodate an emergency access route. In any of these instances, approval of these exceptions will be subject to the Chico Fire Department and Public Works Director. Driveways shall be prohibited along sections of roads exceeding a 12 percent grade, unless approved by Chico Fire Department and Public Works Director.

[1] Vegetation near the surface of the ground that poses a fire hazard, consisting of leaves, dead branch material, downed logs, tree cones, living plants, etc.

[2] Vegetation that allows a fire to climb up from the landscape into the tree canopy.

4. Roads shall be a minimum of 20-feet wide and driveways shall be a minimum of 12-feet wide to allow evacuation and emergency vehicles simultaneous access.
5. Roads shall maintain a 13.5-foot vertical clearance to accommodate emergency vehicles.
6. Solid wood fencing shall not be allowed along the WUI Perimeter; however, may be allowed along the Temporary WUI Perimeter, providing fire breaks described under Vegetative Fuels Management are completed and maintained; fire resistant coating shall be applied to fences in these conditions.
7. To function as fire breaks, enhanced trails (illustrated on Figure 5-16 and described in Chapter 5) shall be 6-8-feet in width and composed of compacted gravel or decomposed granite. Fire breaks are built into the plan area within the trail network, as well as proposed streets and bike paths within VESP area.
8. Class I bike paths and enhanced trails shall include design features that minimize barriers to emergency response, such as knock-down bollards for emergency access at trailheads.
9. Habitable structures shall be located within 200 feet (measured as a fire hose would lay) of a road or other point accessible to a fire apparatus.
10. For the purposes of limiting the spread of wildfire to an adjoining building, the building setbacks for respective land use designation(s) described in Chapter 4 (Land Use) shall be adhered to, unless deemed otherwise by the City of Chico Planning Department and Fire Department.
11. Rolled curb access points shall be provided in open space areas. Open space access points shall be provided at each cul-de-sac that abuts a permanent open space and along streets adjacent to permanent open space areas. Such access points, illustrated in Chapter 5 (Circulation), shall be identified with signage and painted red curbs.
12. Development along Stilson Canyon shall be accompanied by construction of a 10-foot wide enhanced trail located within the Regional Park, generally as depicted on Figure 5-2 (Trail Master Plan). As incremental development occurs, this trail, serving also as a fire break, shall be extended to the eastern most point of development, transitioning south to the Old Doe Mill Road to buffer the eastern most edge of development and connect to the VESP trail system.
13. Points of access to the Regional Park for Wildland Fire apparatus shall be provided generally as depicted on Figure 4-5 (WUI Perimeter), the actual location(s) of such access being determined by the Chico Fire Department at time of Tentative Map(s).
14. Development in areas abutting the Fire Access Road shown on Figure 5-1 shall, as applicable, be accompanied by design and or construction to accommodate a Type 3 pumper engine. Such access road shall be nominally 12 feet in width, at or below a 12 percent grade, with a surface material of compacted gravel or decomposed granite. The access road may be integrated into the VESP's road system and or enhanced trail network. Knock-down bollards or similar entry controls shall be placed at entry points along streets and trailheads. Final alignment, phasing, and specifications of the fire road, including design of the creek crossing, shall be subject to approval of the Chico Fire Department.
15. Areas such as the Community Park, Big Meadows Park, and the Elementary School may be designated, labeled, and signed as safety zones for citizens unable to evacuate or for emergency responder use. These areas shall be evaluated by Chico Fire Department before designated a safety zone.
16. Maintain secondary emergency access points, as illustrated on Figure 5-1.
17. Comply with Chico Fire Department's routine emergency evacuation plans.

Vegetative Fuels Management

Open space along the WUI is comprised primarily of grasslands, Oak Woodlands, and in some instance, riparian woodlands. Development areas along the WUI Perimeter range from very low to medium density residential areas, along with a small corner of commercial land near the intersection of the Skyway and Honey Run Road (Figure 5-3).

Fire apparatus access to open space areas described above and in Chapter 5 (Circulation) together with scheduled and recurring reduction of vegetative fuels helps reduce the threat and spread of wildfires.

Compliance

Monitoring compliance of the Fuel Management program requires coordination between the City of Chico Fire Department, the HOA, lot owners and homeowners.

1. The Valley's Edge HOA shall be responsible for coordinating annual inspections by the Chico Fire Department.
2. The Valley's Edge CC&R's shall contain an enforcement mechanism to ensure compliance with these Fuel Management policies by lot owners and or homeowners

Applicability

The VESP's fuel management practices apply to the following areas abutting the WUI, the Temporary WUI, along roadways, and along specified trails:

1. Within 20 feet of roadways abutting land designated open space, maintained by the HOA.
2. Within 3 feet on either side of Class I trails and enhanced trails, maintained by the HOA.
3. Within 20 to 30 feet of a property line on the open space side of the WUI, maintained by the HOA.
4. Within 20 to 30 feet (depending on the fuel reduction method) of a property line on the open space side of the Temporary WUI, maintained by the HOA or lot owner.
5. Within 30 feet of a property line on the residential side of developed lots designated VLDR, maintained by the lot owner.
6. Within 30 feet of a property line on the residential side of developed lots designated R1-VE, maintained by the lot owner.

Fuel Management Practices

The following guidelines and directives for the reduction and management of vegetative fuels shall be administered by the responsible entity, monitored by the HOA, and available for inspection by the City of Chico Fire Department annually as well as on an as needed basis. Unless noted otherwise the following activities shall occur on an annual basis:

Subdivisions

1. For construction activities of a combustible nature, prior to fire season a fire break or fuel reduction zone abutting the boundaries of a subdivision shall be created along the open space perimeter of the WUI, including the Temporary WUI. Where feasible based on topography, soil type, Oak Woodlands and other natural features, a fire break shall be graded to a width not less than 20 feet. Where mechanical

grading is infeasible, a 30 foot fuel reduction zone shall be created using hand or mechanical trimming reducing annual grasses to four (4) inches or less, remove dead or dying trees, thin continuous growths of shrubs, prune tree branches to a height of 10 feet from the ground or 1/3 the height of the tree, whichever is less.

2. Vegetation within 30 feet of a perimeter lot shall be annually thinned and pruned both horizontally and vertically by the Valley's Edge HOA to reduce surface and ladder fuels.
3. Vegetation management on a perimeter lot shall include tree trimming or removal of dead plant material and mowing native grasses to a maximum height of four (4) inches.
4. Proposed landscaping shall be fire resistant.

Homeowners (by June 15th of each year)

1. Mow, trim, or by other method maintain non-irrigated grasses to four (4) inches or less. Avoid mowing non-irrigated grasses during hot or windy days. If unavoidable, such activities should be done before 10:00 am and accompanied by pressure ready water hose or other source of fire suppression.
2. Remove combustible material such as leaves and tree branches on or overhanging roofs, chimneys, and gutters.
3. Remove dead vegetation from the yard and maintain tree branches 10 feet or more away habitable structures.
4. Prune tree branches to a height of 10 feet from the ground or 1/3 the height of the tree, whichever is less.

Valley's Edge Homeowners Association (HOA)

1. Coordinate annual visitation and inspection with the Chico Fire Department.
2. Monitor and enforce homeowner, subdivider, builder and lot owner compliance with the VESP's firewise requirements and protocols.
3. Create and or maintain required fire breaks and fuel reduction zones along the open space perimeter of the WUI, including the Temporary WUI. Where feasible based on topography, soil type, Oak Woodlands and other natural features, a fire break shall be graded to a width not less than 20 feet. Where mechanical grading is infeasible, a 30 foot fuel reduction zone shall be created using hand or mechanical trimming reducing annual grasses to 4 inches or less, remove dead or dying trees, thin continuous growths of shrubs, prune tree branches to a height of 10 feet from the ground or 1/3 the height of the tree, whichever is less.
4. The Valley's Edge HOA shall appoint a Trails Management Committee responsible for maintenance of the trails system, including vegetative management.
5. Open space areas outside of the WUI should prioritize natural grazing vegetation management strategies, such as controlled burns and contracted grazing services.
6. Fuel management in permanently preserved habitat conservation areas shall be consistent with the preserve's management plan.

Education

The Valley's Edge HOA shall be chiefly responsible for disseminating information to residents and other stakeholders regarding the VESP's firewise policies and practices, as well as wildfire preparedness in general. The HOA shall:

1. Post applicable firewise policies in neighborhood parks, community centers, and other gathering places, on the community website, and in newsletters sent to residents.
2. Address firewise policies at annual HOA meetings and at other events coordinated presentations with the City of Chico Fire Department, particularly immediately prior to the fire season.
3. Encourage residents to enroll in the Code Red or other community early warning system coordinated through City of Chico Fire Department.

4.14.3 Impacts and Mitigation Measures

Methods of Analysis

This section is based primarily on a review of the following plans, documents, and data sets to evaluate project-related impacts to wildfire: 2030 City of Chico General Plan, City of Chico Municipal Code, CAL FIRE Mapping Data for Fire History, Fire Threat, Fire Hazard Severity, and Erosion Threat, and the proposed VESP, including Firewise Guidelines.

Thresholds of Significance

A significant impact would occur if development of the proposed project would do any of the following:

- Impair an adopted emergency response plan or emergency evacuation plan.
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Project Impacts

4.14-1: The proposed project could impair an adopted emergency response plan or emergency evacuation plan in the event of a wildfire.

The proposed project would add population and structures to the CFD responsibility area, which would increase demand for emergency response and related services. The proposed project is located along an identified evacuation route in both the City and County's adopted Emergency Evacuation plans. The City's Emergency Evacuation Plan identifies Highway 99 and Highway 32 as the primary evacuation routes in the southeastern portion of the city. The VESP provides new roadway access at the main project entries on Skyway and E. 20th Street with additional access from Honey Run Road. In addition, as shown on Figure 2-6 in Chapter 2, Project Description, the Steve Harrison Memorial Bike Path would provide secondary emergency access. In addition, a

fire access road would be provided in the eastern portion of the project site to ensure adequate emergency vehicle access is available to serve those residential neighborhoods. The project would adhere to emergency access requirements specified in the VESP Firewise Guidelines. These include designing the areas abutting fire access roads to accommodate a Type 3 pumper engine, providing rolled curb access points in open space areas and at each cul-de-sac that abuts a permanent open space, and along streets adjacent to permanent open space areas. Additionally, Class I bike paths and enhanced trails would include design features that allow fire vehicle access by minimizing barriers, such as knock-down bollards. Final alignment, phasing, and specifications of fire access roads would be subject to approval by CFD at the individual subdivision map stage.

Currently, the project site is under the fire protection of the Butte County Fire Department (BCFD) and CAL FIRE through an established cooperative agreement. Upon approval of the VESP and annexation of the site to the City the Chico, the CFD would be the first responder for fire protection and emergency response services to the project site. It is assumed the City would maintain the cooperative agreement with both Butte County and CAL FIRE to provide support in the event of a major wildfire. The nearest station is Fire Station 4, approximately 1.6 miles from the project entrance on 20th Street. Under Chico General Plan Action S-4.1.1 (Fire Response Time), CFD strives to obtain an initial response time of five and a half minutes or less for at least 90% of fire emergency response calls in urbanized areas. Given the proximity of the nearest fire station and the inclusion of fire suppression features onsite, it is reasonable to expect that an initial response time of five and a half minutes would be met. While a new fire station is not proposed within the VESP area, developers would be required to pay an impact fee for capital improvements that would provide funding for new City fire stations and related improvements.

In summary, the proposed project is not expected to impair evacuation procedures along this road as there are no modifications proposed that would impede access or evacuation. The VESP includes standards in Chapter 4 to address wildfires including emergency preparedness. Development of both commercial and residential uses within the VESP would be required to comply with the firewise policies, described above in the regulatory setting. The VESP HOA would be responsible for providing information to residents regarding firewise policies and practices, wildfire preparedness, and emergency evacuation procedures. In addition, in the event of a fast-moving wildfire, areas such as the Community Park, Big Meadows Park, and the Elementary School would be designated as a safety zone to shelter-in-place for people unable to evacuate the site. Due to the heightened awareness of wildfire, the project has been designed in collaboration with the CFD to ensure adequate emergency response and evacuation procedures, or on-site shelter areas, are in place in the event of a wildfire. For these reasons, the proposed project would have a **less-than-significant impact** on emergency response and access.

Mitigation Measures

No mitigation measures are required.

4.14-2 The proposed project may exacerbate wildfire risk exposing future residents to potential wildfire hazards.

Wildfire Risk

The project site is undeveloped and the vegetation community is dominated by annual grasslands and includes blue oak and foothill pine woodland. Based on CAL FIRE's fire hazard severity zones the project site is identified as a Moderate fire hazard area. The majority of the site includes slope gradients of less than 5% with areas of up to 15% slopes along the side-slopes of some of the creek drainages. While there are steeper slopes primarily along the northern and southern boundaries of the project site and in the northeastern portion of the

site these areas would remain undeveloped and maintained as open space. Wildfires typically burn up slopes faster and more intensely than along flat ground and steeper slopes result in a faster moving fire. Moderate or steep slopes greater than 20%, are considered a higher risk for wildfires. Fires also travel in the direction of the ambient wind, which usually flows uphill. Development is proposed within the flatter areas of the site with the exception of approximately 46-acres designated for 25 homes located on a mesa in the southeast corner of the site, accessible only from Honey Run Road. The flatter areas of the site planned for development do not present an increased wildfire risk. However, approximately 50% of the project site is designated for parks, trails, and open space. The project includes 417 acres or 29% of the project site designated for open space and preserve areas to be left in its existing natural condition. Open space would wrap around the northern, eastern and southern edges of the plan area. In 2018, a large portion of the site was burned as part of the Camp Fire. The prevailing winds typically come from the south/southeast; however, during the Camp Fire winds shifted and came from the north resulting in fires getting pushed to the south and southeast including along Honey Run Road and the eastern portion of the project site.

Overhead PG&E transmission lines traverse the project site, as described in the Environmental Setting. Faulty PG&E power lines have resulted in igniting wildfires including the Camp Fire in 2018 and the Tubbs Fire in 2017. Although the project's electrical infrastructure would be placed underground and would not have the potential to ignite a wildfire, the project would be placing residences in an area with existing overhead transmission lines thereby exposing future residents to an existing wildfire risk.

As noted above, a majority of the proposed development would be located within the flat areas of the project site and would replace existing grassland with irrigated landscape and buildings constructed to current building codes as well as the VESP Firewise standards to further minimize the loss of structures in the event of a wildfire. However, the project site is located within an area mapped by CAL FIRE as within a Moderate Fire Hazard zoned and based on the history of wildfires in the area, portions of the project site were burned in the Doe Mill Fire (1999), Honey Fire (2007), and Camp Fire (2018). In addition, due to the increasing threat of wildfires and loss of property and human lives associated, in part, with development within the WUI, the amount of forested areas to be left in open space adjacent to areas slated for development, as well as proximity to undeveloped lands to the east, the project would exacerbate wildfire risk and expose future residents to potential wildfire hazards. Therefore, the project's wildfire risk is considered **potentially significant.**

Construction

Other factors that could exacerbate wildfire risks include construction activities due to the use of flammable materials, tools, and equipment capable of generating a spark and igniting a wildfire. During construction activities, heat or sparks from construction equipment and vehicles have the potential to ignite vegetation and start a fire. Construction sites also store and use of flammable hazardous materials. The risk of wildfire would be especially high during weather events that include low humidity and high wind speeds. The following construction-related equipment has the potential to generate heat or sparks that could result in wildfire ignition:

- Earth-moving and excavating equipment (i.e., tractors, graders, mowers, bulldozers, backhoes, cranes, excavators, trucks, and vehicles) – heated exhaust or sparks in contact with vegetation may result in ignition.
- Chainsaws and other small gas-powered equipment/tools – may result in vegetation ignition from overheating, sparks, fuel leak, etc.
- Welders – open heat source may result in metallic sparks coming into contact with vegetation.

- Wood chippers – include flammable fuels and hydraulic fluid that may overheat and spray onto vegetation with a hose failure.
- Grinders – sparks from grinding metal components may land on a receptive fuel bed.
- Torches – heat source, open flame, and resulting heated metal shards may come in contact with vegetation.

The potential risk of wildfire ignition and spread associated with construction activities can be managed so that the potential for vegetation ignition is reduced. In addition, pre-planning and construction personnel fire awareness, reporting, and suppression training can lower the probability of ignition, and increase the probability that fire can be controlled and extinguished in its early stages. Data indicate that 95% of all wildfire ignitions are controlled during an initial attack (Smalley 2008). The VESP Firewise Guidelines require that for construction activities, prior to fire season, as determined by the Chico Fire Department, a fire break or fuel reduction zone abutting the boundaries of a subdivision would be created along the open space perimeter of the WUI, including the Temporary WUI, defined as the edges of phased development abutting natural landscapes in areas designated for future development. Where feasible a 20-foot-wide fire break would be graded. Where grading is infeasible, a 30-foot fuel reduction zone would be created by hand or smaller equipment to help contain any potential fire that may be started accidentally by construction.

Additionally, measures that would help reduce construction-related wildfire impacts include having adequate water available to service construction activities, implementing a construction-phase fire prevention plan, providing proper wildfire awareness, reporting, and suppression training to construction personnel, and requiring that all construction-phase components of the fuel modification be fulfilled prior to delivery of combustible materials/lumber to the project site. Even with adherence to the required construction best practices and the VESP Firewise Guidelines construction activities require the use of equipment that can easily spark a fire, especially during windy days and the hot, dry summer and fall months (fire season). Because construction activities associated with the installation of infrastructure for the project may exacerbate fire risk in the project area, the project impact is considered **potentially significant**.

Operations and Maintenance

As each phase of the project is completed, operation and maintenance activities could also exacerbate wildfire risk because the project would introduce the periodic use of flammable materials, power tools, and equipment, all of which have the potential to ignite adjacent vegetation and start a fire, especially during weather events that include low humidity and high wind speeds. The VESP Firewise Guidelines includes a requirement that the HOA and individual homeowners adhere to fuel management requirements to reduce and maintain vegetation within open space areas and around homes and installation and maintenance of fire-resistant landscaping as well as irrigated landscaping within the residential areas would help reduce fuel loads and readily-ignitable fuels such as grasses. The HOA would be responsible for creating and or maintaining required fire breaks and fuel reduction zones along the open space perimeter of the WUI, including the Temporary WUI. This would include grading a 20-foot fire break in the open space areas, reducing annual grasses to 4 inches or less, removing dead or dying trees, thinning shrubs, and pruning trees. It is assumed all maintenance activities would be conducted as prescribed in California Fire Code Chapter 49 and California Public Resource Codes 4290 and 4291.This managed vegetation condition within and surrounding the developed portion of the project would minimize the potential for wildfire ignition and spread. As specified in the VESP Firewise Guidelines, the HOA would coordinate annual visitation and inspection with CFD, enforce compliance with firewise requirements and protocols, maintain fire breaks and fuel reduction zones along the WUI, and disseminate information to residents regarding all required firewise practices. Compliance with the California Fire Code and annual practices would help

minimize the risk of fire; however, due to periodic weather conditions, use of equipment that has the potential to ignite a fire, and availability of fuel sources, operations and maintenance activities could result in a **potentially significant impact** associated with exacerbating wildfire risk.

Occupant Exposure

The project proposes development of up to 2,777 dwelling units at full buildout, 1,392 of which would be age-restricted to 55 and older. Given the project site's location in a Moderate Fire Hazard Zone, within a WUI Area, and past history of wildfires, several fire protection systems have been included in the VESP project design or are otherwise required through relevant codes and standards. Fire protection systems for the proposed project that serve to minimize occupant exposure to wildfire include:

- Installation of a fire hydrant network, a dedicated fire water pipeline system, and appropriate hose connections.
- A permanent one-million-gallon water storage tank and on-site lakes to be used for additional water supply.
- Construction for perimeter residences along the WUI edges to include the latest ignition resistant building codes found in PRC 4290 and Chapter 7A of the California Building Code and any additional restrictions or requirements adopted locally.
- Installation of sprinklers designed by a licensed Fire Protection Engineer in all structures. Sprinklers for commercial and single family and multi-family units would be connected to the public water system.
- Fire breaks and fuel reduction zones along the open space perimeter of the WUI, including the Temporary WUI (lands not yet developed).
- Fuel management and maintenance of defensible space areas within 20-30 feet of residential lots that back up to open space to be maintained by the HOA and/or individual property owners and inspected annually by the CFD.
- All project roads, driveways, turnarounds and bridges designated as access roads for use by fire apparatus to be designed consistent with the requirements of California Fire Code Chapter 5, Section 503.
- Habitable structures shall be located within 200 feet (measured as a fire hose would lay) of a road or other point accessible to a fire apparatus.
- Installation and maintenance of project landscaping and defensible space areas around structures and roads would create a larger area of managed, irrigated, and maintained vegetation on the project site than currently exists. This would create a larger fuel break in the project area, would provide a working area for firefighters to conduct suppression activities, and would slow a burning fire.

The proposed project includes installation of a fire hydrant network and a dedicated fire water pipeline system. Homes along the WUI perimeter would be built to the latest ignition resistant building codes found in PRC 4290 and Chapter 7A of the California Building Code, which include requirements for use of ignition-resistant materials (noncombustible materials or fire-retardant treated wood). A permanent, one-million gallon water tank would be constructed in one of two higher elevation locations near the eastern boundary of the project site, which would maximize system pressure, ensuring that water pressure would be adequate for fire protection and suppression. Prior to installation of the permanent storage tank, smaller interim water storage facilities meeting applicable VESP design criteria would be used to incrementally and temporarily serve portions of the project as the area is built out. In addition, lake features within parks, including the proposed Regional Park and Big Meadows Park, would provide a potential source of water for wildland fire suppression.

Several commenters from surrounding homes raised concerns regarding increased wildfire risk to themselves. The proposed project has identified certain components or design features intended to minimize exposure of wildfire impacts on the project site which would also include surrounding residents, as discussed above. In addition to the project features discussed above, the project includes on-site fire safe refuge areas for use during a wildfire emergency by both project residents and adjacent neighbors in the event of a wildfire.

Despite these provisions, the project would introduce a substantial new population, approximately 5,654 people within a Moderate Fire Hazard Zone and within a WUI Area and would expose future residents to potential wildfire hazards resulting in a **potentially significant impact**.

Increased Risk from Locating New Development in a Moderate Fire Severity Zone and WUI Area

While it is true that humans are the cause of most fires in California, no substantial evidence has been identified that links increases in wildfires with the development of ignition resistant communities.

Based on its location in a Moderate Fire Severity Zone and WUI Area, the proposed project is required to provide for a level of planning, ignition resistant construction, site access, water availability, fuel modification and construction materials and methods that have been developed specifically to allow fire safe development within these areas. The VESP aims to exceed these requirements based on the fire protection designs and measures integrated into the proposed project, which minimize the potential for fire ignition. As a result, the potential fire risk to existing surrounding residents in the area is not expected to increase. Several measures are outlined in the VESP's Firewise Guidelines. For example, future homes nearest Stilson Canyon in the north would have an increased setback from this ridgeline and would be separated with a significant buffer that spans the width of the northern boundary line. The trail system in this area would serve as a fuel break. Additionally, the VESP HOA would be responsible for managing and maintaining the open spaces areas and on-site trail system, including brush clearance, tree trimming, and trail maintenance, minimizing potential obstacles for emergency response in these areas. As detailed in the VESP and its Design Guidelines, the proposed project would include a robust fire protection system that employs land use planning, site design, and ignition resistant material and methods to minimize fire risk and result in a fire hardened project. Homes along the WUI perimeter would be constructed consistent with Chapter 7A of the CBC and Chapter 49, Section 4905 of the California Fire Code. Fire hardening is the practice of the construction and maintenance of developed area such that embers are less likely to accidentally ignite in the event of a nearby wildfire. Common practices include: roofing with composition, metal or tile; cover all vent openings with metal mesh; close eaves and soffits with fire-resistant materials; install dual-paned windows with one pane of tempered glass; utilizing fire-resistant exteriors such as stucco, fiber cement wall siding, fire retardant, or treated wood. This same robust fire protection system that protects the proposed project's structures, future residents, and property, also provides protection from on-site fire spreading to off-site vegetation. Accidental fires started within the project site would have limited ability to spread due to the required land use planning, site design, and ignition resistant material and methods outlined in the VESP Firewise Guidelines and Design Guidelines. Homes not directly adjacent to the WUI perimeter would not be required to be constructed consistent with Chapter 7A of the CBC and would not receive the same protection. Lastly, since 2011 the California Residential Code and the California Building Code requires all new residences and commercial buildings to include fire sprinklers.

As detailed in the VESP Design Guidelines and the Firewise Guidelines, the project's landscaping would comprise native, drought tolerant landscaping, which would be highly maintained which further reduces its ignition potential. Consistent with the CBC, structures would be highly ignition resistant along the WUI through fire-resistant exterior materials, closed soffits, fire-safe vent screens, reduced overhangs and fireproof split

wood shingles and the interiors would be protected with automatic sprinkler systems, which have a high success rate for confining fires or extinguishing them. The project would employ the fire adapted community strategies with a strong outreach program that raises fire awareness and promotes preparedness among its residents, employees and visitors. Finally, the proposed fire suppression capabilities at the site and proximity to Fire Station 4 would ensure the initial response time to wildfire ignitions meets the City's goals, which would increase the likelihood of successful initial attacks limiting the potential for the spread of a wildfire.

The VESP includes standards in Chapter 4 to address wildfires from five distinct perspectives: land planning, firefighting capabilities, fire resistant materials and building standards, vegetative fuel reduction and management, and emergency preparedness. Development of both commercial and residential uses within the VESP would be required to comply with the firewise policies, described above. This includes fuel management to be inspected annually by the CFD as well as requirements for the HOA and individual homeowners to manage and reduce potential fuel sources. The HOA would be responsible for providing information to residents regarding firewise policies and practices, as well as wildfire preparedness. In addition, in the event of a fast-moving wildfire, areas such as the Community Park, Big Meadows Park, and the Elementary School would be designated as a safety zone to shelter-in-place for people unable to evacuate the site.

Despite these provisions, the proposed project would develop residential and commercial uses within a Moderate Fire Hazard Zone in a WUI Area where fires have occurred in 1999, 2007, and 2018. In addition, homes not directly adjacent to the WUI perimeter would not be designed with the same fire-resistant standards as homes along the WUI perimeter. Given the introduction of these land uses into an undeveloped area that has experienced wildfire there is the potential for the project to exacerbate fire risks through an accidental fire resulting in the exposure of future residents to the risk of wildfire hazards. This is a **potentially significant impact.**

Mitigation Measures

Implementation of Mitigation Measures WFIRE-1 (construction) and WFIRE-2 (operation) would ensure the proper guidelines are followed during construction and operation to reduce the risk of fire. Modifications to the VESP's Firewise Guidelines, Standards & Vegetation Management Standards would ensure all feasible steps are taken to minimize the potential for wildfires to expose future residents to hazards reducing the impact to a **less-than-significant level.**

Construction

WFIRE-1: **Construction Fire Prevention Plan.** Activities prior to construction activities including site clearing, grading or trenching, the project developer(s) shall work with the Chico Fire Department to prepare a Construction Fire Prevention Plan to be provided to all future developers. The plan shall address training of construction personnel and provide details of fire-suppression procedures and equipment to be used during construction. Information contained in the plan shall be included as part of project-related environmental awareness training to occur prior to any ground disturbance. At a minimum, the plan shall be consistent with the requirements in California Building Code Chapter 33 and California Fire Code Chapter 33 and shall include the following:

- Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, use of spark arrestors, and hot work restrictions;
- Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days;

- Specifications for adequate water supply to service construction activities;
- On-site fire awareness coordinator role and responsibility;
- Construction worker training for fire prevention, initial attack firefighting, and fire reporting;
- Emergency communication, response, and reporting procedures;
- Coordination with local fire agencies to facilitate access through the project site;
- Implement all construction-phase fuel modification components prior to combustible building materials being delivered to the site;
- Emergency contact information; and
- Demonstrate compliance with applicable plans and policies established by state and local agencies.

Operation

WFIRE-2: **Update VESP Firewise Guidelines.** The Valley Edge Specific Plan's Firewise Guidelines, Standards & Vegetation Management Standards shall be updated to incorporate the following specifications:

- Implement and maintain fuel treatment areas along all project roads and any trails proposed for use by fire apparatus or use as fire/fuel breaks. Fuel treatment areas shall measure 20 feet in width (horizontal) as measured from the outer edge of pedestrian sidewalk or other improved travel surface and shall occur on both sides of the road or trail. Maintenance of treatment areas shall be conducted according to the standards outlined in California Fire Code Chapter 49, Section 4906.
- Locate all habitable structures within 150 feet of fire apparatus access roads, also in accordance with CFC Section 503, unless approved otherwise by the Chico Fire Department.
- Ensure building materials and construction methods for all structures are in compliance with California Fire Code Chapter 49, Section 4905, for all buildings, not just those residences located along the Wildland Urban Interface perimeter lots.

4.14-3 The proposed project may exacerbate fire risk associated with the installation and maintenance of project-related infrastructure.

Infrastructure required for development of the proposed project is discussed in detail in Chapter 2, Project Description. The potential risk of wildfire due to general site clearing, grading and construction activities is discussed above under Impact 4.14-2. The following identifies proposed project infrastructure and its contribution to wildfire risk:

Non-potable and Recycled Water Supply: Two existing wells onsite would supply necessary potable and recycled water. Recycled water would be used for firefighting purposes. Any maintenance needed on either well would not result in additional temporary or permanent impacts from exacerbating wildfire risk beyond those identified in impact 4.14-2.

Stormwater Management: The VESP would install a combination of conventional surface and subsurface drainage systems, including underground pipe conveyances, drainage basins, bio-swales, outfalls, existing natural swales, and seasonal creeks. All drainage system improvements would be designed and constructed

pursuant to City standards, subject to approval by the City's Director of Public Works-Engineering. These stormwater features are static, do not generate heat/sparks and would not impede site access or otherwise hinder evacuation or emergency response efforts. Installation of these features would not result in additional temporary or permanent impacts from exacerbating wildfire risk beyond those identified in impact 4.14-2.

Fire Protection: The VESP would install a fire hydrant network, a dedicated fire water pipeline system, and fire department hose connections. These features are static, do not generate heat/sparks and would not impede site access or otherwise hinder evacuation or emergency response efforts and availability of on-site fire water would reduce potential wildfire impacts. Installation of these features would not result in additional temporary or permanent impacts from exacerbating wildfire risk beyond those identified in impact 4.14-2.

Defensible Space: Defensible space would be required within 20 to 30 feet of the rear property line adjacent to the WUI perimeter to reduce fire hazards. Defensible space zones are passive measures and are designed to reduce fuel volumes and moderate fire behavior near structures to reduce potential wildfire impacts. Installation and ongoing maintenance of defensible space areas would not result in additional temporary or permanent impacts from exacerbating wildfire risk beyond those identified in Impact 4.14-2.

Power Lines: Project electric power lines would be installed below ground and would not exacerbate wildfire risk or result in additional temporary or permanent impacts from exacerbating wildfire risk beyond those identified in Impact 14.4-2.

Construction associated with installing on-site infrastructure and ongoing maintenance of this infrastructure could increase the potential for wildfire due to the use of a variety of heavy and light duty equipment that could result in sparks potentially igniting a fire. This is considered a **potentially significant impact**.

Mitigation Measure

See Mitigation Measure WFIRE-1. Compliance with this mitigation measure would ensure the proper guidelines are followed during construction to reduce the risk of an accidental fire to **less than significant**.

4.14-4 The proposed project could expose future residents to hazards associated with post-fire runoff, slope instability, or drainage changes as the site is developed.

Wildfires can greatly reduce the amount of vegetation within a burned area. Plant roots stabilize the soil and above-ground plant parts slow water, allowing it to percolate into the soil. Removal of surface vegetation resulting from a wildfire reduces the ability of the soil surface to absorb rainwater and can allow for increased runoff that may include large amounts of debris. If water-resistant soil conditions exist post-fire, the rate of surface water runoff is increased as water percolation into the soil is reduced (Moench and Fusaro 2012). The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012). As discussed in Section 4.6 Geology and Soils, the project site is underlain with bedrock that is also referred to as a lava cap. This bedrock is a mix of mud, volcanic ash, sand and gravel.

As described in Chapter 2, Project Description, and Section 4.6, Geology and Soils, hillsides to the northwest of the proposed project are steep in many areas and are susceptible to erosion, landslides, and debris flow. Slopes surrounding the proposed development area have the potential for slope failure, landsides and debris flow. It is expected that such conditions could be exacerbated in a post-fire landscape where surface vegetation has been removed (burned) and erosion potential increases. However, as discussed under Impact

4.6-4 in Section 4.6, project development would occur along relatively flat areas, while areas of steeper slopes along the northern and southern boundaries and in the northeast portion of the site would be untouched; thus, it is unlikely given where future development is proposed that there would be substantial adverse effects involving landslides to residences located downslope under post-fire conditions. The rolling topography located throughout the project site has gradients of 5% or less, which would not be susceptible to landslides or slope instability. Furthermore, the proposed project would comply with all design guidelines, CBC requirements, geotechnical recommendations, and other applicable regulations, which would further reduce potential impacts regarding landslide hazards.

The proposed project's drainage system would involve a combination of conventional surface and subsurface drainage systems, including underground pipe conveyances, drainage basins, bio-swales, outfalls, existing natural swales, and seasonal creeks. On-site detention features would employ Best Management Practices (BMPs) to slow water, filter out containments, and encourage infiltration and evapotranspiration. While wildfire might damage bio-swales or vegetation in seasonal creeks, the majority of the drainage facilities would be installed underground and would likely not be affected by fire. It is anticipated topographical and developed drainage features would be unaffected under post-fire conditions and would result in a minimum increase in the risk of post-fire flooding and increased runoff. However, in the event of a wildfire as project build-out is occurring there could be areas not yet developed where post-fire conditions could result in substantial erosion which could affect developed areas exposing people or structures to significant risks. Therefore, the impact is considered **potentially significant**.

Mitigation Measures

Implementation of Mitigation Measure WFIRE-3 would ensure potential impacts associated with post-fire flooding, runoff, or slope instability are evaluated and addressed through the use of erosion control techniques, reseeding grasses, and tree removal, if required, to ensure any potential impacts would be reduced to **less than significant**.

WFIRE-3: **Post Fire Activities.** Following any on-site wildfire during project build-out in areas where development may be affected by post-fire risks, a post-fire field assessment shall be conducted by an engineering geologist or civil engineer, in coordination with the Chico Fire Department, to identify any areas that may be subject to increased risk of post-fire flooding, landslide or erosion. Any recommendations identified by the geologist to mitigate such risk shall be provided to the City of Chico Community Development Director and any applicable Emergency Operations Center for consideration of the work necessary to allow safe re-entry and/or re-occupation of the affected area.

Cumulative Impacts

The cumulative context for emergency response and evacuation efforts or plans includes future buildout of the City of Chico, including the sphere of influence (SOI) under the 2030 General Plan, and all of Butte County as evacuation routes and plans are interconnected between all communities within the County.

The cumulative context for wildfire risk impacts is all of Butte County including the City of and surrounding WUI area, as these impacts depend on the specific conditions and features on the project site and surrounding wildlands. Because post-fire hazards are site-specific these concerns would not combine with other development resulting in a cumulative effect. Therefore, post-fire hazards are not addressed on a cumulative level.

4.14-5 Implementation of the proposed project could contribute to cumulative impacts on emergency response and evacuation efforts or plans.

Emergency Response

As discussed in the Setting section above, there have been 65 wildfires within the County between 2008 and 2018. Within Butte County, there are 164,759 acres of WUI area (Butte County 2020). Within the City of Chico, there are 17 acres of Very High Fire Severity Zones, concentrated in the northeastern portion of the City (CAL FIRE 2020). However, Butte County has stated that planned population growth, and local regulation of associated development within the jurisdictional boundaries of incorporated cities and unincorporated areas prevent the occurrence of existing cumulative public services, including fire response, by implementing adopted General Plans that include a policy framework which ensures adequate capacity exists to support proposed development (Butte County 2012). Thus, the County determined there is no existing cumulative impact related to emergency response. The City's 2030 General Plan EIR also determined there would not be a significant cumulative impact related to emergency response.

The proposed project combined with other projects, such as the other special planning areas (SPAs) that include new residential and commercial development contributing to an increase in population, may have a cumulative impact on the ability of the City and County to protect residents, workers and structures from wildfires. Buildout of the City's 2030 General Plan and other areas of Butte County would increase population and/or activities and ignition sources, which may increase the chances of a fire that would require response from CFD, CPD, and possibly other jurisdictions that have mutual aid agreements with the City, such the Butte County Fire Department and CAL FIRE.

Per the City's General Plan, existing standards for future development that are expected to provide adequate access, fire flows, fire suppression techniques, and other facilities to maintain an appropriate level of fire protection would continue to derive from the California Building Code, the California Fire Code, and the California Mechanical Code. By complying with these requirements, each project would avoid creating obstacles to the routine extension of fire protection and emergency services in the vicinity. As development continues in the area, the increased population could warrant improvements to the CFD facilities and/or acquisition of new equipment and new staff. It could also warrant increased responses from neighboring fire districts, such as CAL FIRE or Butte County Fire Department. As development continues in the area, the increased population could warrant improvements to the CFD facilities and/or acquisition of new equipment and new staff. It could also warrant increased responses from neighboring fire districts, such as CAL FIRE or Butte County Fire Department. It is assumed that new development within the CFD service area would increase the total revenue that the CFD collects through parcel taxes and fees for various inspections, building plan reviews, hydrant inspections, etc., which would provide funding to the CFD to handle the cumulative increase in demand. The proposed project would include fire access and circulation throughout the project site including emergency access and on-site shelter-in-place areas. Implementation of the VESP would not decrease or inhibit adequate response action or times from CFD fire stations. Therefore, the project's contribution is not considerable and would not impair emergency response resulting in a **less-than-significant impact.**

Evacuation

As discussed above, the cumulative context for evacuation efforts or plans includes future buildout of the City of Chico, including new development described under the 2030 General Plan, as well as development in Butte County. The City's Emergency Evacuation Plan identifies Highway 99 and Highway 32 as the primary evacuation routes in the southeastern portion of the City. During evacuations for major emergencies, traffic congestion occurs and affects the ability of the public to evacuate in a safe, timely manner (Butte County 2019).

The proposed project, combined with other development in the City, would contribute to an increase in population that would have a cumulative impact on the ability of established evacuation routes to provide for safe and timely evacuation of affected residents. Neither the City nor the County have identified any existing cumulative impact related to emergency evacuation.

The VESP would provide new roadway access at the main project entries on Skyway and E. 20th Street with additional access from Honey Run Road, which would provide quick access to Highway 99 and Highway 32. Access points to both Highway 99 and Highway 32 are located approximately 1.3 miles from the intersection of E. 20th Street. In addition, a fire access road would be provided in the eastern portion of the project site to ensure adequate emergency vehicle access is available to serve those residential neighborhoods. As discussed under Impact, 4.14-1, during buildout of the plan area over the next 20+ years, coordination with the CFD, CPD, and, if necessary the California Highway Patrol would be initiated to ensure emergency vehicle access is not impaired along local roadways and is maintained in areas under construction. The proposed project would include fire access and circulation throughout the project site including emergency access and on-site shelter-in-place areas. As identified in the County's 2019 Local Hazard Mitigation Plan, there is currently a high-priority effort to maintain and improve evacuation routes. This effort includes road widening to provide safer ingress and egress for the community and emergency response vehicles, upgrading guardrails to fire-resistant material, and widening shoulders of roads or adding new ones as necessary. Additionally, Butte County is planning to develop a Multi County Traffic Plan in order to address the existing problem related to traffic congestion during emergency events (Butte County 2019). The Multi County Traffic Plan is expected to be completed in 2025 and includes modeling traffic across multiple adjacent counties to determine the best traffic flows during major emergencies. A subsequent plan would be developed that identifies critical traffic flow obstructions and recommends solutions to remedy gridlock locations (Butte County 2019). This is in accordance with the Butte County General Plan, which includes Policy HS-P15.3 stating that emergency access routes shall be kept free of traffic impediments. The project's contribution to the potential to impair emergency evacuation would not be considerable because the project includes on-site locations to safely shelter in place and adheres to all State building codes to minimize the spread of a wildfire. Therefore, the project's contribution is not considerable and would not impair the City or County's emergency evacuation plan and the cumulative impact is **less than significant**.

Mitigation Measures

No mitigation measures are required.

4.14-6 Implementation of the proposed project could exacerbate wildfire risk to onsite residents resulting in a cumulative contribution.

The context for wildfire risk impacts is all of Butte County including the City of Chico and surrounding WUI area. As discussed in the Setting section above, there have been 65 wildfires within the County between 2008 and 2018. Within Butte County, there are 164,759 acres of WUI area (Butte County 2020). Within the City of Chico, there are 17 acres of Very High Fire Severity Zones, concentrated in the higher elevations of Upper Bidwell Park (CAL FIRE 2020). Outside of the City, there is a Very High Fire Hazard Severity Zone in the SRA less than 3 miles east of the project site, west of the City of Paradise. Neither the City nor the County have identified an existing cumulative impact related to wildfire risk.

The proposed project combined with other development in the City and the County would contribute to an increase in population within WUI areas that could lead to an increase in exposure to wildfire risk to residents and structures due to development in the WUI. Potential development in the WUI area within the County include the Bell Muir Special Planning Area with capacity for up to 644 dwelling units in northwestern Chico, the Barber Yard SPA with capacity for up to 1,096 dwelling units in the southern area, and the South Entler SPA with capacity for up to 949 dwelling units in the southern portion of the City (Butte County 2015). These areas are identified in the City of Chico General Plan as SPAs and do not include any development assumptions. As addressed throughout the VESP's Design Guidelines and Firewise Standards and as discussed in Impacts 4.14-1 through 4.14-4, the proposed project aims to both reduce the risk of accidental fire ignition through purposeful and deliberate fire-resistant design and planning. While there is the potential for the project to result in a wildfire that could affect surrounding areas, it is not possible to determine to what extent the proposed project would exacerbate the likelihood of accidental ignition. Approximately 50% of the project site is designated for parks, trails, and open space that wrap around the north, east and southern edges of the plan area. Based on the history of wildfires in the area, the increasing threat of wildfires is due to an increase in human activity within the grassland and forested area to be left undeveloped, as well as proximity to undeveloped lands. Buildout of the project's future commercial and residential areas within the WUI would increase human activities and potential ignition sources, which may increase the chances of a wildfire and spread of wildfire, and increase the number of people and structures exposed to risk of loss, injury, or death. When considered in combination with other projects within the City and the County within WUI areas, the project's contribution to wildfire risk could be cumulatively considerable but would be reduced to **less-than cumulatively considerable with mitigation.** Specifically, compliance with Mitigation Measure WFIRE-2 and the VESP Firewise Standards would ensure all steps are taken to minimize the potential for the spread of a wildfire and hazards to future residents. Mitigation Measure WFIRE-2 requires the VESP Firewise Standards be updated to implement and maintain fuel treatment areas along all project roads and any trails proposed for use by fire apparatus or use as fire/fuel breaks, to locate all habitable structures within 150 feet of fire apparatus access roads, and to ensure that building materials and construction methods for all residences and structures over 400 square feet in size within VESP are in compliance with California Fire Code Chapter 49, Section 4905, not just those residences located along the WUI perimeter lots. Thereby ensuring all steps are taken to minimize and avoid wildfire risks.

Mitigation Measures

See Mitigation Measure WFIRE-2. Compliance with this mitigation measure would ensure requirements are followed to minimize the potential for wildfires to spread creating hazards to future residents. The impact would be reduced to **less than cumulatively considerable.**

4.14.4 References

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5 Other CEQA Considerations

5.0 Introduction

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Environmental Impact Report (EIR) must also identify (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, (4) growth-inducing impacts of the proposed project, and (5) alternatives to the proposed project (evaluated in Chapter 6, Project Alternatives).

5.1 Significant Environmental Effects

Chapter 2, Executive Summary, and Sections 4.1 through 4.14 of this Draft EIR provide a comprehensive overview of the proposed project's significant environmental effects, including the level of significance both before and after mitigation.

5.2 Significant and Unavoidable Environmental Impacts

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed Valley's Edge Specific Plan project (proposed project) on various aspects of the environment are discussed in detail in the technical sections contained in Chapter 4, Environmental Analysis, of this Draft EIR. There are two project-specific and two cumulative impacts that cannot be avoided if the project is approved in Aesthetics and Greenhouse Gases. Because these impacts cannot feasibly be mitigated to a less-than-significant level, they would remain significant and unavoidable. The remainder of all project impacts can be mitigated to a less-than-significant level through the adoption of recommended mitigation measures.

5.3 Significant Irreversible Environmental Impacts

Section 15126.2 (d) of the CEQA Guidelines requires a discussion of any significant irreversible environmental change that would be caused by the proposed project. Generally, a project would result in significant irreversible changes if:

- The primary and secondary impacts would generally commit future generations to similar uses (such as highway improvement that provides access to a previously inaccessible area);
- The project would involve a large commitment of nonrenewable resources (CEQA Guidelines Section 15126.2(c));
- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;

- The project would involve a large commitment of nonrenewable resources; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the proposed project would result in the long-term commitment of resources of the project site to urban land use. The development of the proposed project would likely result in or contribute to the following irreversible environmental changes:

- Conversion of undeveloped land currently used for grazing. Approximately 800 acres of undeveloped land would be converted to urban uses, thus precluding other alternate land uses in the future. Another approximately 650 acres would be used for open space recreation by residents.
- Irreversible consumption of energy and natural resources associated with the future use of the site.

Development of the proposed project would result in the commitment of the project site to urban development, thereby precluding other uses for the lifespan of the project. Restoration of the site to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels. Wood products, asphalt, and concrete would be used in construction along with gas and diesel fuel. With respect to operational activities, compliance with all applicable state and local building codes, as well as mitigation measures, VESP goals, actions and guidelines, City of Chico zoning regulations, and standard conservation features would ensure that resources are conserved to the maximum extent feasible. The proposed project would incorporate a number of sustainable practices that reduce the consumption of energy. Nonetheless, construction and operation of the proposed project would result in irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, natural gas, and gasoline and diesel for automobiles and construction equipment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with the project. While the proposed project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during project construction and operation, as described in Section 4.8, Hazards and Hazardous Materials, all such activities would comply with applicable local, state and federal laws related to the use, storage and transport of hazardous materials, which would significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage. The project itself does not include any uniquely hazardous uses that would require any special handling or storage. Further, the project does not contain any industrial uses that would use or store acutely hazardous materials.

The proposed project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts include the use of non-renewable and/or slowly renewable natural and energy resources, such as lumber and other forest products and water resources during construction activities. Operations associated with future uses would also consume water, natural gas and electricity. These irreversible impacts, which are unavoidable consequences of urban growth, are described in detail in the appropriate sections of this Draft EIR (see Chapter 4).

5.4 Growth-Inducing Impacts

As required by Section 15126.2(e) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, the stimulation of economic activity within the region, or the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

These circumstances are further described below.

- **Elimination of Obstacles to Growth:** This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects:** This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include such effects as the "multiplier effect." A "multiplier" is an economic term used to describe interrelationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

Elimination of Obstacles to Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect, though not necessarily a significant one. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

Removal of Infrastructure Limitations or Provision of Capacity

The proposed project includes sizing of infrastructure to serve the project which is consistent with the City's approved infrastructure master plans. To accommodate the project some wastewater infrastructure off-site needs to be constructed. The project site is located in the City of Chico's approved Sphere of Influence (SOI) and would be proposed for annexation to implement the VESP. Existing development or areas planned for development are located to the north, south and west of the project site; therefore, the project would not encourage future growth in these areas due to expansion of services and development of the project site. Undeveloped land in the County is located to the east of the project site, which could feasibly be developed in the future. This land is not included in the City's SOI, nor does it include any services. Although development of infrastructure to accommodate the project could be considered growth inducing because it would extend

urban development physically closer to this easterly edge of the VESP area, the infrastructure (public roads, sewer, etc.) would stop at least 300 feet from the easterly boundary and would not be adequately sized for further extension east. This 300-foot plus buffer is not only important for providing onsite vegetation management capabilities along the wildland urban interface, it would also facilitate an urban growth boundary for the City of Chico. Such a buffered interface is in contrast to other developments along the eastern edge of Chico which have left streets stubbed or adjacent to the edge.

Land to the east is within the County and according to the County's General Plan this land is designated to continue for agricultural uses. The County does not have any infrastructure in this area to support development and at this time no development is proposed. Except for bringing the City limits closer to the easterly edge of the VESP area, the proposed project would not eliminate any constraints that are currently obstacles to growth in this portion of the City, such as access to infrastructure including roads, water supply, wastewater conveyance and treatment, that could potentially hasten future urban development to the east of the project site.

Development of the project site, which would include extending roads and other services to support development would not; however, enable land in the County to easily be developed. The City's 2013 Sanitary Sewer Master Plan Update (SSMPU) identified improvements to the sewer infrastructure. The VESP is required to extend sewer lines to accommodate future development which would also serve nearby areas as well as the future planned growth of the Southgate Special Planning Area located in the City. However, the extension of this infrastructure has been identified by the City in the SSMPU and would not contribute to growth that has not previously been contemplated within the City. If, in the future development is proposed east of the project site it would require an expansion of the City's SOI, annexation into the City, a general plan amendment, rezone, and environmental review under CEQA, as well as other permits and approvals prior to approval. The City has determined future growth can be accommodated through infill and development of the Special Planning Areas (SPAs), so it is not anticipated the City would expand their SOI to accommodate additional demand for growth in the foreseeable future.

Economic Effects

The proposed project would affect the local economy by the construction of new residences and neighborhood-serving commercial uses that would encourage people to live in Chico and would help encourage people to stay in the City to take advantage of proximity to Chico State University, local shops, restaurants, and other amenities in nearby downtown.

Additional local employment can be generated through the multiplier effect, as discussed previously in this chapter. The multiplier effect tends to be greater in regions with larger, diverse economies due to a decrease in the requirement to import goods and services from outside the region.

Two different types of additional employment are tracked through the multiplier effect. *Indirect* employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the project. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

The multiplier effect also calculates *induced* employment. Induced employment follows the economic effect beyond the expenditures of the residents within the project area to include jobs created by the stream of goods and services necessary to support residences within the proposed project. When a manufacturer buys or sells products, the employment associated with those inputs or outputs are considered *induced* employment.

For example, when an employee of the project goes out to lunch, the person who serves the employee lunch holds a job that is *indirectly* related to the proposed project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered *induced* employment.

The multiplier effect also considers the secondary effect of employee expenditures. Thus, it includes the economic effect of the dollars spent by those employees and residents who support the employees of the project.

Increased future employment generated by employee and resident spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the City, Butte County, and beyond.

Impacts of Induced Growth

The growth induced directly and indirectly by the proposed project could contribute to the environmental impacts, discussed in Chapter 4, in the City and the County, as well as the greater regional area. As discussed above, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. An example of this indirect effect would be the expansion of water or wastewater infrastructure, which might allow for more development to be served by access to these services. The proposed project includes construction of off-site wastewater lines required to serve the project and identified as a planned improvement in the City's Sewer System Master Plan. Under CEQA, growth is not considered necessarily detrimental or beneficial.

Indirect and induced population growth in the City could further contribute to the loss of open space because it may encourage the conversion of undeveloped land to urban uses for additional housing and infrastructure. However, it is assumed this new growth would occur within areas of the City designated and zoned for development or planned for potential future urban development. Again, however, the particular open space that might get converted cannot be predicted with any certainty, all such conversions to urban land use would occur within areas planned for growth in the City's General Plan. Development of the property to the east of the project site is not contemplated for future development by either the City or the County. However, as noted above if development is proposed in the future by the City it would require an expansion of the City's SOI, annexation into the City, a general plan amendment, rezone, and environmental review under CEQA prior to approval.

The General Plan includes specific goals and actions that support planned growth including Goal LU-1 which addresses urban growth limits and where growth would occur and Action LU-1.1.2 that includes consulting with Butte County and other entities, to ensure a coordinated approach to future land use planning. In addition, Policy LU-1.2 reinforces maintaining boundaries between urban uses and the foothills to the east and Policy LU-2.3 which requires sustainable land use in new growth areas of the City. The General Plan also includes Action LU-1.3.1 that commits to supporting public improvements in areas that will support development. In addition, the General Plan encourages future development of the project site and discourages piecemeal development. Goal LU-6 calls for comprehensively planning the Special Planning Areas (SPA), which includes the project site, to meet the City's housing and jobs needs and Action LU-6.2.1 which requires preparation of a specific plan, planned development, or other comprehensive plan for the SPA. Action LU-6.2.4 specifically addresses the Doe Mill/Honey Run SPA (project site) and indicates future development should include a broad range of housing types and densities, along with recreation and commercial uses. As a result, the General Plan EIR concluded growth effects resulting from future buildout of the General Plan are not anticipated (City of Chico 2010).

In summary, although the proposed project can be said to induce growth, the consequences of such growth-inducement are too speculative to meaningfully predict and, furthermore, due to existing General Plan goals, policies and actions that support planned growth the proposed project would not result in a significant growth inducing impact. Growth-inducing effects are therefore considered **less than significant.**

5.5 Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the proposed project. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. As indicated in the CEQA Guidelines, the discussion of cumulative impacts need not provide the same level of detail as project-related impacts. The discussion should be guided by "standards of practicality and reasonableness" (CEQA Guidelines, Section 15130(b)). Although project-related impacts can be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (Section 15130(a)). Where a lead agency concludes that the cumulative effects of a project, taken together with the impacts of other closely related past, present, and reasonably foreseeable probable future projects are significant, the lead agency then must determine whether the project's incremental contribution to such significant cumulative impact is "cumulatively considerable" (and thus significant in and of itself).

Each technical section included in Chapter 4 provides an evaluation of the project's contribution to any significant cumulative impact.

Cumulative Context

To ensure an adequate discussion of cumulative impacts is included in an EIR, CEQA allows the lead agency to use either a list of past, present, and probable future projects (including those projects outside of the control of the lead agency), or projections included in an adopted local, regional, or statewide plan like a general plan (CEQA Guidelines, Section 15130(b)(1)). The general cumulative impact context for evaluating cumulative impacts for the technical issue areas evaluated in Chapter 4 of this Draft EIR considers development projections identified in the City's General Plan, or evaluates the potential loss of resources on a much broader, regional scale. The cumulative impact analyses in this Draft EIR thus do not rely on any list of specific pending, reasonably foreseeable development proposals in the general vicinity of the proposed project.

It is important to note that the basis of the cumulative analysis varies by technical area. For example, traffic and traffic-related air emissions and noise analyses assume development that is planned and/or anticipated in the City, as well as the surrounding unincorporated area, because each contributes to traffic on local and regional roadways that is quantifiable. Operational air quality impacts are evaluated against conditions in the City and surrounding areas within the Sacramento Valley Air Basin federal nonattainment area for ozone. The cumulative analysis in each of the technical sections evaluates the proposed project's contribution to the cumulative scenario. The technical sections in Chapter 4 evaluate the project's cumulative impacts at the end of the impact analysis including a description of the cumulative context for each issue area evaluated.

5.6 Other Considerations

Changes in population (and housing) in and of themselves are generally characterized as social and economic effects and are not considered physical effects on the environment. As noted in the Chapter 2, Project Description, the proposed project would not induce unplanned population growth, because development of the project site was planned for and identified in the City's General Plan for mixed use development and the project is consistent with those planned land uses.

CEQA provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic changes are connected to physical environmental effects. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (CEQA Guidelines Section 15382). The guidance for assessing economic and social effects is set forth in Section 15131(a) of the CEQA Guidelines:

> Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on physical changes.

While an increase in population resulting from new development does not necessarily cause direct adverse physical environmental effects, the project's direct and indirect physical environmental effects associated with construction and operation of the project, such as increased vehicle trips and associated increases in air pollutant emissions and noise, and increase in water demand and need for services are all addressed in the technical sections contained in Chapter 4 of this Draft EIR.

5.7 References

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6 Alternatives

6.1 Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, environmental impact reports (EIRs) are required 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" (14 CCR 15126.6(a)). This alternatives analysis is prepared in support of CEQA's goals to foster informed decision making and public participation (14 CCR 15126.6(a)). An EIR is not required to evaluate the environmental impacts of alternatives at the same level of detail as the proposed project, but it must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project.

The alternatives analysis is required even if the alternatives "would impede to some degree the attainment of the project objectives or would be more costly" (14 CCR 15126.6(b)). An EIR must evaluate "only those alternatives necessary to permit a reasoned choice" (14 CCR 15126.6(f)) and does not need to consider "every conceivable alternative" to a project (14 CCR 15126.6(a)). The alternatives evaluated should be "potentially feasible" (14 CCR 15126.6(a)), but inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision makers for a given project who must make the necessary findings addressing the feasibility of alternatives for avoiding or substantially reducing a project's significant environmental effects (California Public Resources Code, Section 21081; see also 14 CCR 15091).

This chapter describes the project alternatives selected for analysis, evaluates the environmental impacts associated with them, and compares the impacts with those of the Valleys Edge Specific Plan (VESP or proposed project). This chapter also identifies those alternatives considered by the City of Chico (City) but not carried forward for detailed analysis and explains the basis for the City's decision.

In conformity with CEQA, the purpose of this analysis is to focus on alternatives that are potentially feasible, and that would avoid or substantially lessen any of the significant effects of the project. The analysis in the Chapter 4, Environmental Analysis, Sections 4.1 through 4.14, finds that the proposed project would result in the following significant and unavoidable impacts:

- Impact 4.1-2: The proposed project could degrade the existing visual character or quality of public views of the site and its surroundings.
- Impact 4.1-4: The proposed project could result in a significant cumulative impact related to scenic vistas and quality of public views or visual character.
- Impact 4.7-1: The proposed project could generate an increase in greenhouse gas emissions.
- Impact 4.7-2: The proposed project could conflict with a plan, policy or regulation to reduce greenhouse gas emissions.

The Alternatives analysis also considers those significant impacts of the proposed project that could be reduced to less-than-significant levels with mitigation, including increase of criteria pollutants and exposure of sensitive receptors to pollutants, impacts to wildlife and plant species and their habitats, risk of wildland fires, increase in ambient and traffic noise levels, and increase of vehicle miles traveled. These topics were

considered in the development of viable project Alternatives that could lessen environmental effects of the project. To a lesser extent, the Alternatives analysis also considers those impacts of the proposed project in which mitigation is not necessary.

6.2 Project Objectives

As stated above, the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project.

The specific project objectives are:

- Prepare a Specific Plan that is consistent with and implements the policy framework of the Chico 2030 General Plan, including direction provided for the Doe Mill/Honey Run SPA.
- Create a Specific Plan that is both beneficial to the community, and economically viable for development.
- Create a planned community with a village core to serve as the community's social, civic and economic hub.
- Provide housing that responds to demographic shifts, such as the need for senior housing, and replacement housing due to the Camp Fire.
- Promote healthy, livable and complete neighborhoods by providing community gathering places, parks, schools, open space/greenways, retail areas, shopping areas, employment areas, and pedestrian and bicycle trails.
- Promote outdoor recreation by creating space and facilities that foster play, exercise, adventure and social interaction.
- Use open space to preserve and protect sensitive cultural resources and biological resources, including natural drainages.
- Integrate natural landforms, features and open space corridors with the land use plan and project design.
- Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and both conventional and electric vehicles.
- Develop employment opportunities through construction, maintenance and operation of infrastructure, housing, commercial and public uses.

6.3 Summary of Alternatives

Development of Project Alternatives

In developing the project alternatives evaluated in this EIR, the EIR preparers worked with city staff to explore various modifications to the proposed project that could reduce environmental effects while responding to the project objectives and reflecting any suggestions for project alternatives that were provided in the public comments received in response to the Notice of Preparation. This effort focused first on reducing the project's significant and unavoidable impacts, which are related to visual character, scenic vistas, quality of public views, and greenhouse gas emissions. Other significant impacts considered in the selection of alternatives could be reduced to less-than-significant levels with mitigation, including impacts on air quality, biological resources, cultural resources, hazardous materials, drainage and flooding, noise, demand for pedestrian/bike facilities and vehicle miles traveled. Other concerns raised during the scoping

period include the potential to harm wildlife species, wildlife corridors, and vernal pools; potential impacts to historical resources[1]; increase in demand for groundwater; ability of fire and police to serve the project along with other development in the City with adequate response times; increase in traffic and congestion; potential risk associated with wildfire hazards; and potential flooding risk. While not determined to be significant and unavoidable impacts of the proposed project, the development of project alternatives also considered reducing the significance of potential impacts to these topics of concern. The Alternatives selected for analysis do not reduce all of the concerns mentioned above but have been selected for their ability to reduce the most significant project impacts.

Alternatives Considered but Rejected as Infeasible

As described above, Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but were rejected as infeasible for detailed study, and briefly explain the reasons underlying the lead agency's determination. Furthermore, Section 15126(f)(1) states that "among 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…and whether the proponent can reasonably acquire or control or otherwise have access to the alternative site. No one of these factors established a fixed limit on the scope of reasonable alternatives."

An off-site alternative was rejected as infeasible because the project applicant does not own any other property that would be feasible for this project and cannot "reasonably acquire, control or otherwise have access to [an] alternative site" (refer to §15126.[f][1] of the CEQA Guidelines). In addition, the proposed project is not unique in that development of a similar project elsewhere would not preclude nor eliminate demand for the development of the project on this project site.

Project Alternatives Selected for Analysis

This section provides an evaluation of the environmental effects of each alternative relative to the environmental effects of the proposed project. These conclusions are listed in the alternatives summary matrix provided at the end of this discussion.

The alternatives to be analyzed in comparison to the proposed project include:

- **Alternative 1: No Project/No Development Alternative.** This alternative assumes no development would occur, and the site would remain under the jurisdiction of Butte County and in its current undeveloped condition.
- **Alternative 2: No Project/2030 General Plan Alternative.** This alternative assumes development would occur consistent with the land use assumptions included in the City's 2030 General Plan for this site.
- **Alternative 3: Increased Commercial Alternative.** This alternative would increase the proportion of commercial land uses developed within the project site and slightly reduce the total number of residential units.
- **Alternative 4: Increased Open Space and Higher Density Alternative.** This alternative would increase the amount of open space and shift residential land uses to other areas within the project site resulting in an increase in in open space and overall project density. The amount of commercial development would not change.

[1] All the historic-era resources were evaluated and determined to not be eligible for NRHP or CRHR listing; therefore, do not meet the definition of "historical resource" under CEQA. Impacts to historic-era resources are less than significant and do not require mitigation.

6.3.1 Alternative 1: No Project/No Development

Description

CEQA Guidelines Section 15126.6(e) requires that an EIR evaluate a "No Project Alternative," which is intended to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. In cases where the project constitutes a land development project, the No Project Alternative is the "circumstance under which the project does not proceed." For many projects, the No Project Alternative represents a "No Development" or an "Existing Conditions" scenario, in which the project site remains in its existing condition and no new development occurs for the foreseeable future. However, CEQA Guidelines Section 15126.6(e)(3)(B) establishes that "If disapproval of the project under consideration would result in predictable actions by others such as the proposal of some other project, this 'no project' consequence should be discussed." This EIR considers both situations. Alternative 1, No Project/No Development assumes no grading or development would occur on the project site and the existing site conditions would remain. The site would remain under the jurisdiction of Butte County and not be annexed into the City. Alternative 2, No Project/2030 General Plan, assumes that the project site would be developed as assumed in the City's 2030 General Plan. Alternative 2 is addressed below, after the Alternative 1 analysis.

Comparative Analysis of Environmental Effects

The No Project/No Development Alternative would produce no changes on the project site because the site would remain in its current undeveloped condition, effectively eliminating the project impacts discussed in this Draft EIR. Under the No Project/No Development Alternative, no demolition, construction, or ground disturbance would occur so there would be no changes to visual conditions, biological resources, ambient noise, or effects to existing resources in the project area. There would be no air emissions or greenhouse gas (GHG) emissions associated with construction and operation activities, and no new vehicle trips. No new utilities, or services would be needed to serve new residents or land uses. No residents or structures would be affected by any potential hazards including wildfires, or other natural disasters. All impacts that would occur from the proposed project would be avoided under this Alternative.

Relationship to Proposed Project Objectives

The No Project/No Development Alternative would preserve open space areas and natural landforms, but would otherwise fail to achieve the proposed project objectives such as creating a specific plan that is beneficial to the community and economically viable, providing housing to the area and new employment opportunities through commercial uses.

6.3.2 Alternative 2: No Project/2030 General Plan

The project site is currently located within Butte County and is zoned AG-20/SP. The County's General Plan designates this site as a planned growth area for which a specific plan would be required to be prepared. This area is also within the City's Sphere of Influence (SOI) and identified in the City's 2030 General Plan as a Special Planning Area 5 (SPA-5) or the Doe Mill/Honey Run SPA. The City has assigned a conceptual mix of land uses to this site, as shown in Figure 6-1. Consistent with CEQA Guidelines Section 15126.6(e)(3)(A), the No Project/2030 General Plan Alternative assumes the site would be annexed to the City and a specific plan prepare. Under this Alternative future development in the Specific Plan area would be consistent with the SPA-

5 land use assumptions, which include a mix of residential and commercial uses, per the City's 2030 General Plan. Similar to the proposed project, the future development would include a village core, retail along Skyway, a variety of residential densities, open space areas on the eastern side, parks, a potential elementary school, and preserve areas with creekside corridors. However, the No Project/2030 General Plan Alternative would allow for the development of fewer dwelling units as compared to the proposed project (2,095 units compared to 2,777 units) and less non-residential or commercial uses (374,247 square feet [sf] compared to 447,155 sf) and does not specifically identify age-restricted housing units. Table 6-1 compares the development scenario of Alternative 2 with the proposed project.

The Alternatives analysis assumes that all applicable mitigation measures proposed for the project would apply to each alternative.

Table 6-1. Alternative 2 Land Use Summary Comparison Table

Project	Land Use	
	Residential Units	*Non-Residential (Commercial and Office) Sf*
Proposed Project	2,777	447,155
Alternative 2	2,095	374,247
Total Change	**(682)**	**(72,908)**

Source: Chico 2030 General Plan Appendix C.

Comparative Analysis of Environmental Effects

Under the No Project/2030 General Plan Alternative, it is assumed that development in the project area would occur consistent with the SPA-5 land use assumptions that would result in a smaller development footprint, with 682 fewer dwelling units and 72,908 sf less of commercial uses as compared to the proposed project. The reduced scale of development, approximately 25% fewer units, would result in impacts that are less severe or similar to the those of the proposed project. A comparison between the environmental effects of the proposed project and the of the No Project/2030 General Plan Alternative is included below.

Impacts Identified as Being the Same or Similar to the Proposed Project

Demolition of the existing ranch buildings would be required for new development under this Alternative, the same as the project. Similar to the proposed project, Mitigation Measure HAZ-1 would be required to determine the presence of any ACMs or lead-based paints and to ensure that proper procedures are in place to prevent exposure of hazardous materials or conditions to construction personnel. This Alternative would also introduce new commercial and residential uses that could expose people or structures to wildland fire risks. Given the existing wildfire risk at the site, this Alternative would also require measures for fire prevention and suppression to reduce wildfire impacts such as those detailed in Mitigation Measures WFIRE-1 and WFIRE-2. Thus, the No Project/2030 General Plan Alternative would have less-than-significant impacts regarding hazards and hazardous materials, similar to the proposed project.

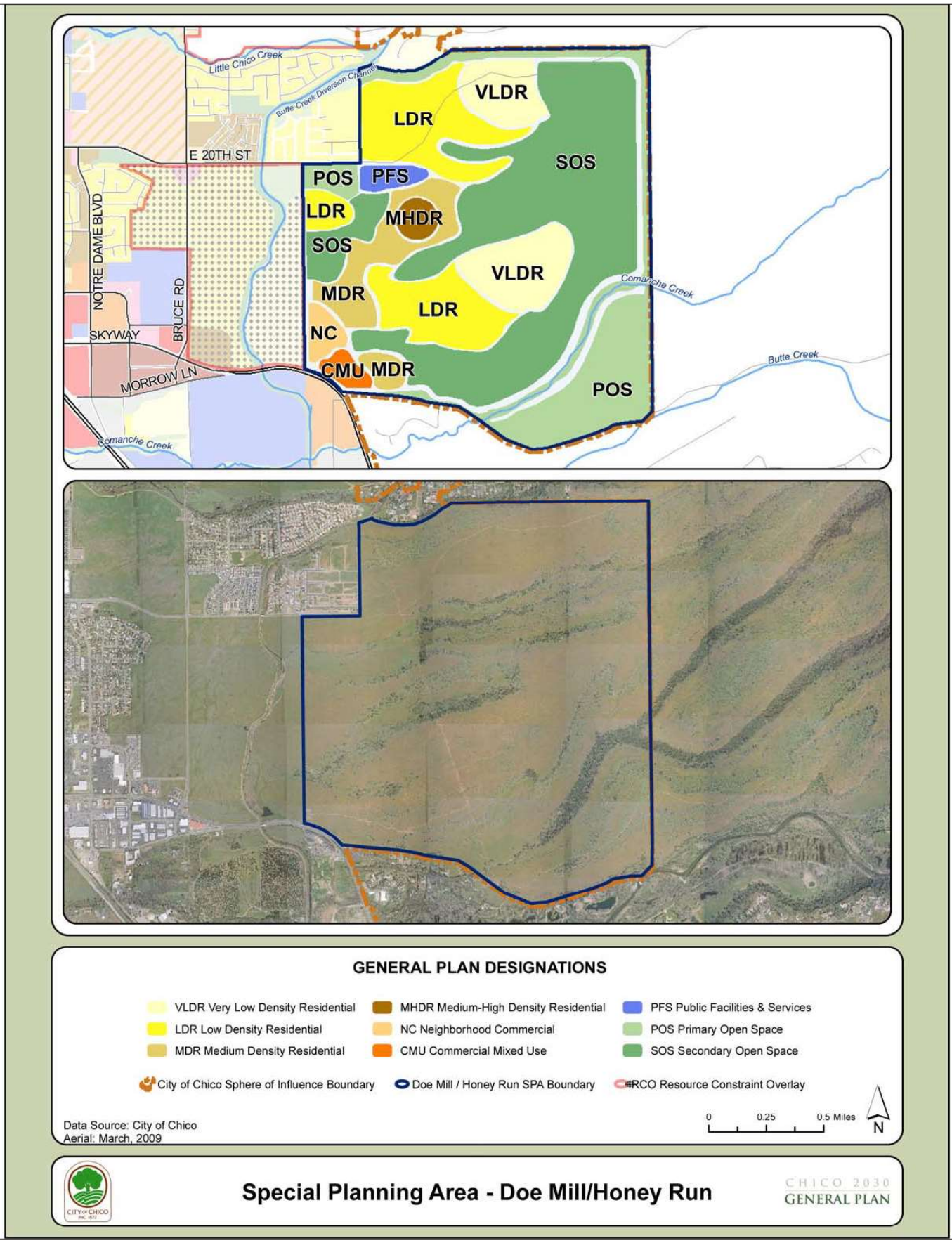
Additionally, this Alternative would introduce fewer new students to the area, and school impact fees are considered full mitigation for any impacts to school services that would result from a project. Impacts associated with increase in students would be the same as the proposed project.

Impacts Identified as Being Less Severe than the Proposed Project

Under the No Project/2030 General Plan Alternative, development in the project area would occur consistent with the SPA-5 land use assumptions which would be less intense than the proposed project. As discussed in the Aesthetics section of this Draft EIR, development of the VESP would alter the visual character of the area by building on approximately 60% of the site's 1,400-acres of undeveloped land. While this Alternative would develop a smaller area or 'footprint' of the project site, the visual character would still be permanently changed from its existing undisturbed and undeveloped condition. Development would primarily occur in the western portion of the project site, with new residential and commercial uses adjacent to Skyway and along the western project boundary where public views of the site are most available. New buildings would be introduced into an area that is undeveloped, which would change the existing undeveloped visual character. As shown in Figure 6-1, the conceptual land use plan for SPA-5 assumes no development within the eastern portion of the project site or south of Comanche Creek, and proposes a large open space buffer and less overall density than the proposed project. It is anticipated changes in visual character and quality of public views under project-specific and cumulative conditions would continue to be significant and unavoidable, the same as the project, even assuming compliance with Mitigation Measure AES-1. Overall, because there would be less of the site developed, impacts would be less severe than the proposed project.

This Alternative would develop the project site with new uses that could have potentially significant biological resources impacts. However, the 2030 General Plan description for SPA-5 states that drainage ways would remain unaltered and appropriate setbacks would be maintained to address biological considerations. As shown in the conceptual plan in Figure 6-1, development would generally occur in a similar manner as the VESP but with less development in the southeastern portion of the site, Equestrian Ridge area, around Comanche Creek. It is anticipated that this Alternative would still include development of trails which could result in direct impacts to riparian habitat due to crossings and possibly the spread of invasive species, removal of trees for construction, possible damage to protected wetlands outside of development areas, and disturbance of plant or wildlife species known to inhabit or use the project area. However, less development in the Equestrian Ridge area would require less vegetation and tree removal, and less impact to wetlands and riparian habitat as compared to the proposed project. The protection of additional oak woodlands as open space would help to further reduce impacts to sensitive species and habitat within the area. Impacts could be further reduced with Mitigation Measures BIO-1 through BIO-10, or compliance with avoidance and minimization measures in the Butte Regional Conservation Plan (BRCP) if this Alternative were to seek coverage under the BRCP.

As discussed in Section 4.2 of this Draft EIR, the VESP would result in several significant impacts regarding conflict with air quality plans, increase in criteria pollutants, exposure of sensitive receptors to substantial pollutants, and cumulative air quality impacts due to long-term operational emissions that would exceed the respective Butte County Air Quality Management District (BCAQMD) significance thresholds for reactive organic gases (ROG), nitrogen oxides (NO_x), and coarse particulate matter (PM_{10}). Under this Alternative, new uses would be introduced that would still generate ROG, NO_x, and PM_{10}. However, because there would be fewer dwelling units (682 fewer units) and commercial uses (approximately 73,000 sf less) and therefore, fewer new residents and visitors to the site operational emissions would be less than those from the proposed project. The No Project/2030 General Plan Alternative would potentially still require implementation of air quality measures including Mitigation Measures AQ-1 through AQ-8 to ensure that impacts are less than significant, but these impacts would still be reduced compared to the proposed project.



SOURCE: City of Chico 2017

FIGURE 6-1

Special Planning Area — Doe Mill/Honey Run

Valley's Edge Specific Plan Project

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This Alternative would involve ground disturbance associated with construction activities and would require Mitigation Measures CUL-1 through CUL-4 and GEO-1 to reduce the impacts associated with unintended discovery of archaeological resources, tribal cultural resources, human remains, and paleontological to less than significant, the same as the project. As noted previously, impacts to historic-era resources were determined to be less than significant and do not require mitigation. However, the amount of ground disturbance would be less compared to the proposed project as there would be less grading activity and construction on the slopes of the Equestrian Ridge area, and overall less development of residential and non-residential uses as compared to the proposed project.

Development of this Alternative would require energy resources including electricity, natural gas, and petroleum. As required for the proposed project, this Alternative would comply with General Plan policies and Title 24 energy efficiency and environmental performance standards, and impacts would be less than significant. However, because this Alternative involves less development and fewer new residents with operational energy needs, energy impacts would be less severe than the proposed project.

Due to less development of residential and commercial uses and fewer residents/visitors to the site, the No Project/2030 General Plan Alternative would also result in a reduction on the amount of GHG emissions associated with construction and operation activities. As discussed in Section 4.7, Greenhouse Gases, the proposed project would generate emissions of approximately 24,071 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year which exceeds the screening threshold of 900 MT CO_2e per year. Compared to the proposed project, the No Project/2030 General Plan Alternative would allow for the development of 682 fewer dwelling units and 72,908 sf less of commercial development. However, with the introduction of 2,095 new dwelling units and 374,247 sf of non-residential uses to an undeveloped site, this Alternative would still introduce a considerable amount of GHG-generating uses that would exceed the screening threshold. As such, GHG impacts would be less than the proposed project but still significant and unavoidable, even with implementation of Mitigation Measures GHG-1 and GHG-2.

The No Project/2030 General Plan Alternative would also be required to comply with existing stormwater requirements. Development under this Alternative would create more than 5,000 sf of impervious surface area; therefore, this Alternative would be considered a “regulated project” under Chapter 15.50 of the City’s Municipal Code. It would be subject to stormwater regulations including those in the City’s Municipal Code and National Pollutant Discharge Elimination System (NPDES) permit requirements, including post-construction stormwater management requirements, source control measures and low impact development (LID) design standards. It is anticipated that development of this Alternative would also require development standards similar to those proposed for the VESP, such as grading standards to minimize disturbance to the natural terrain, and new flood control features to reduce runoff rates and on- and off-site flooding. This Alternative is also envisioned to maintain open spaces between areas of development and on-site creeks which would minimize impacts to groundwater recharge. Overall, impacts from this Alternative are expected to be less than significant through compliance with existing stormwater control regulations and new features to prevent potential flooding and erosion impacts. However, due to the decrease in development of residential and commercial uses, as well as the lack of development within the Equestrian Ridge area, this Alternative would have a reduced need for water quality treatment and detention to prevent flooding impacts relative to the proposed project.

Construction noise and vibration impacts would be similar to the proposed project, but on-site noise generation would decrease due to the smaller project footprint. Fewer residents and visitors to the site would result in a reduction in vehicle trips, and therefore less traffic-related noise. This would also result in an overall decrease

in ambient noise levels due to less on-site activity at residential and non-residential land uses, but noise levels could still exceed the City's noise level standards and potential impact off-site noise-sensitive receptors. This Alternative would also include a Village Core area that could host community events and performances, such as described in the VESP. Any use of amplified sound systems for these events could exceed the City's noise thresholds resulting in a potentially significant impact. As described in Section 4.10, Mitigation Measure NOI-1 would ensure effective management of project noise levels and compliance with the City's construction noise level standards while Mitigation Measures NOI-2 through NOI-5 would ensure that existing and future noise-sensitive land uses in the project vicinity are not exposed to sound levels in excess of City noise thresholds by requiring a noise study, minimized mechanical noise from equipment, and shielding of noise-sensitive land uses from noise generated by loading docks and delivery activities. Mitigation Measure NOI-5 would limit unpermitted use of amplified sound equipment at the outdoor recreation and activity areas, protecting nearby noise-sensitive receptors from undue exposure to elevated sound levels. Overall, noise impacts are anticipated to be less severe than the proposed project but would still require mitigation to reduce impacts to less than significant the same as the proposed project.

Under the No Project/2030 General Plan Alternative, new development at the site would require public services such as fire and police services. As discussed in Section 4.11, Public Services and Recreation, the proposed project would add an additional population of approximately 5,654 residents to the City which would require five new police officers (for a total of 92, based on November 2018 staffing) in order to maintain a police officer to citizen ratio of 1:1,219. However, it is noted that Chico Police Department (CPD) facilities are not at capacity, and this number is less than the 13 new police officers proposed as part of the City staffing plan, it would be unlikely that new or expanded police facilities would be needed to house the extra staff needed to serve the proposed project. The No Project/2030 General Plan Alternative would provide fewer new residents to the site and therefore would still not require new police facilities. Chico Fire-Rescue requires all fire protection infrastructure and systems recommended by industry practice be provided at the time of construction and shall be in addition to the minimum requirements of the California Building Standards and applicable state and local Fire Code requirements. With approval of project plans and implementation of City standards, fire hazards associated with this Alternative would be reduced compared to the project and would also not require expansion of fire protection facilities. This Alternative is also planned to include an extensive range of parks, open space, and recreational facilities similar to the proposed project which would not create a significant impact on outside parks or recreational facilities. Overall, this Alternative result in less demand to public services and recreation as compared to the proposed project and would not require new or expanded facilities.

Section 4.12, Public Utilities, of this Draft EIR explains that the additional need for water supply, wastewater conveyance and treatment, electricity, and natural gas from the VESP would be provided and would not require new or expanded facilities and impacts are all less than significant. The proposed project would include a new water system with underground wells and tank storage to provide water for landscape irrigation, water-related amenities, and fire suppression. Cal water has confirmed adequate water supply is available to serve the project. This Alternative would result in a reduction in overall demand for utilities due to having less development than the VESP. The Water Supply Assessment (WSA) prepared for the VESP calculates water use for residential and non-residential (commercial and office) uses with a water use factor, in terms of gallons per day per dwelling unit (gpd/du) for residential uses and gpd/sf for non-residential uses. The water use factor for residential uses is based on the land use density (VLDR, LDR, MDR, and MHDR). The table below compares the estimated water use for Alternative 2 and the proposed project.

Table 6-2. Alternative 2 Estimated Water Use Comparison

Land Use	Average Water Use Factor	Estimated Water Use					
		Proposed Project			*Alternative 2*		
Residential	*gpd/du*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*
Residential	414.5	2,777	1,151,066.5	1,289.36	2,095	868,377.5	972.71
Non-Residential (Commercial and Office)	*gpd/sf*	*Square Footage*	*Estimated Daily Water Use (gpd/sf)*	*Estimated Water Use per Year (AFY)*	*Square Footage*	*Estimated Daily Water Use (gpd/sf)*	*Estimated Water Use per Year (AFY)*
Non-Residential	0.034	447,155	15,203.27	17.03	374,247	12,724.398	14.25
Total Water Use (AFY)		—	—	**1,306.39**	—	—	**986.96**

Note: The WSA prepared for the VESP uses different water use factors for residential land uses (VLDR, LDR, MDR, and MHDR), family housing and senior housing. The family housing water use factor is used in this calculation because the 2030 General Plan does not specify senior housing. The water use factor has been averaged out between all residential land uses in order to compare Alternative 2 to the proposed project, because the 2030 General Plan does not specify the number of units proposed within each land use. For reference, the water use factors for each residential land use are as follows: VLDR: 704 gpd/du; LDR: 504 gpd/du; MDR: 342 gpd/du; MHDR: 108 gpd/du.

As shown in Table 6-2, this Alternative would result in a reduction of water use due to less development than the VESP. Additionally, the City's General Plan Action PPFS-5.2.3 and Municipal Code subdivision improvement requirements (Chapter 18R.08) would ensure that water infrastructure would be available to meet the demand created by new development, and it is assumed this Alternative would meet all of Cal Water's conditions necessary to provide water service.

New development included in the 2030 City of Chico General Plan (including SPA-5) was considered in the expansion of the Water Pollution Control Plant (WPCP) to 12 million gallons per day (mgd) in 2010. As indicated in Section 4.12 of this EIR, wastewater demand for the proposed project was quantified based on the following assumptions: (1) a single family residence produces 288 gallons per equivalent dwelling unit (EDU) per day of wastewater, (2) one multi-family residential unit is equivalent to 0.846 EDU, and (3) all other non-residential uses produce 1,500 gallons of wastewater per acre. The wastewater generation for Alternative 2 is compared to the proposed project in Table 6-3, below. However, Table 6-3 conservatively assumes that multi-family residential units would use the same amount of water as single-family residential units because the 2030 General Plan does not indicate how many multi-family units are proposed. Additionally, Table 6-3 assumes that based on the assumed floor area ratio (FAR) of 0.3 for Neighborhood Commercial and Commercial Mixed Use in the General Plan, the 374,247 sf of non-residential uses would be located upon approximately 28.67 acres of land. The calculation shown is an estimate for analysis purposes and is not intended to be an accurate representation of wastewater generation under the proposed project or Alternative 2. A more accurate analysis of the proposed project's wastewater generation is included in Section 4.12 of this EIR.

Table 6-3. Alternative 2 Estimated Residential Wastewater Generation

Land Use	Wastewater Generation Rate	Proposed Project		Alternative 3	
		Units	*Wastewater Generation (gal/day)*	*Unit*	*Wastewater Generation (gal/day)*
Residential	288 gal/EDU	2,777 EDU	799,776	2,095 EDU	603,360
Non-Residential	1,500 gal/ac	56.3 acres	84,450	28.67	43,005
Total (mgd)	—	—	**0.88**	—	**0.65**

Source: City of Chico, 2020.

As shown in Table 6-3, this Alternative would result in a reduction of residential wastewater due to fewer proposed dwelling units. It is also assumed that commercial wastewater generation would be reduced from the proposed project because there would be less commercial development.

PG&E, which supplies electric and natural gas service, is required by the California Public Utilities Commission (CPUC) to update the existing systems to meet any additional demand. Fewer residents and less commercial development under this Alternative would also result in less solid waste than the VESP and would comply with all applicable solid waste diversion, reduction, and recycling mandates. Overall, this Alternative would result in fewer residents, non-residential uses, and overall less development than the VESP so impacts would be less severe and would remain less than significant.

As discussed in Section 4.13, the project's total average VMT per service population would exceed the VMT threshold by 1%. To reduce project-generated VMT per service population, the project would implement Mitigation Measure TRAF-2 which requires instituting a Transportation Demand Management (TDM) program to reduce external vehicle trips generated by the proposed project. Compliance with this mitigation measure would reduce impacts to less than significant. Under the No Project/2030 General Plan Alternative, there would be fewer residents and onsite commercial uses, which would assist with vehicle trip reduction. Impacts would be further reduced with implementation of TDM strategies required under Mitigation Measure TRAF-2. It is anticipated the amount of VMT generated under this Alternative would be similar, although less compared to the proposed project, and compliance with TDM measures included in Mitigation Measure TRAF-2 would reduce VMT and the impact would be less than significant, the same as the project.

New development at the project site could exacerbate fire risk or expose people and structures to wildfire hazards. As noted in Section 4.14, the project area has a history of wildfires and portions of the project site have been burned in the past, such as from the 2018 Camp Fire. Therefore, wildfire risks and hazards were considered to be potentially significant for the VESP. Given the introduction of new land uses into an undeveloped area that has experienced wildfire there is the potential for this Alternative to exacerbate fire risks or result in the exposure of future residents to the risk of wildfire hazards, the same as the project. However, the conceptual plan shown in Figure 6-1 does indicate that residential uses are not proposed in the Equestrian Ridge area or other areas, which contain slopes. As noted in Section 4.14, wildfires typically burn up slopes faster and more intensely than along flat ground, and travel in the direction of the ambient wind which is usually uphill. In addition, should a fire occur within the area, firefighters would be able to better defend residential areas closer to urban areas and accessible from multiple roadways. Similar to the proposed project, implementation of firewise guidelines and standards, vegetation management such as those in Mitigation Measures WFIRE-1 (construction) and WFIRE-2 (operation) would ensure the proper guidelines are

followed during construction and operation to reduce the risk of fire. Given the heightened awareness of wildfire, future development from this Alternative is also expected to be designed in collaboration with the CFD to ensure adequate emergency response and evacuation procedures, or on-site shelter areas, are in place in the event of a wildfire. Implementation of Mitigation Measure WFIRE-3 would ensure potential impacts associated with post-fire flooding, runoff, or slope instability are evaluated and addressed through the use of erosion control techniques, reseeding grasses, and tree removal, if required, to ensure any potential impacts would be reduced to less than significant. Overall, because there is less development proposed under this Alternative as compared to the proposed project hazards associated with wildfire risk would be reduced.

Impacts Identified as Being More Severe than the Proposed Project

There would be no impacts identified as being more severe than the proposed project.

Relationship to Proposed Project Objectives

The No Project/2030 General Plan Alternative would fully achieve the project objective of a Specific Plan that is consistent with the direction provided for in the Doe Mill/Honey Run SPA/SPA-5. This Alternative would be generally similar to the proposed project as a planned, "complete" community with a variety of land uses such as residential, commercial, parks, open space, and a school. A reduction in the total amount of housing and commercial uses would not achieve the intent of the project objectives to provide housing and develop employment opportunities to the extent that the proposed project would. In addition, this Alternative does not specify any age-restricted housing options would be provided so it would not meet this objective. Lastly, this Alternative would have a greater achievement of providing open space to protect sensitive resources and integrate natural landforms with the land use plan.

6.3.3 Alternative 3: Increased Commercial

This Alternative would address VMT and related issues, including air quality and GHG by providing more opportunities for residents to shop and obtain services closer to home and maintaining a majority of residential units. This Alternative would also include preparation of a Specific Plan but would increase the proportion of commercial land uses developed within the area in comparison to the proposed project and would slightly reduce the total number of residential units, as detailed below. Age-restricted housing would be included under this Alternative.

Under the proposed VESP, the commercial land uses are segmented into two types: Village Core (V-Core) and Village Commercial (V-Comm). The Village Core designation would occupy approximately 12.6 acres and the Village Commercial designation would provide 43.7 acres. A total of 447,155 sf of commercial space could be developed under the proposed project. Under the Increased Commercial Onsite Alternative, there would be an additional 39.5 acres designated for commercial uses (approximately 10 acres of V-Core and 29.3 acres of V-Comm) provided. The total amount of commercial uses would increase to 95.6 acres. As shown on Figure 6-2 and summarized in the table below, the following revisions to the proposed land use plan would occur under this Alternative.

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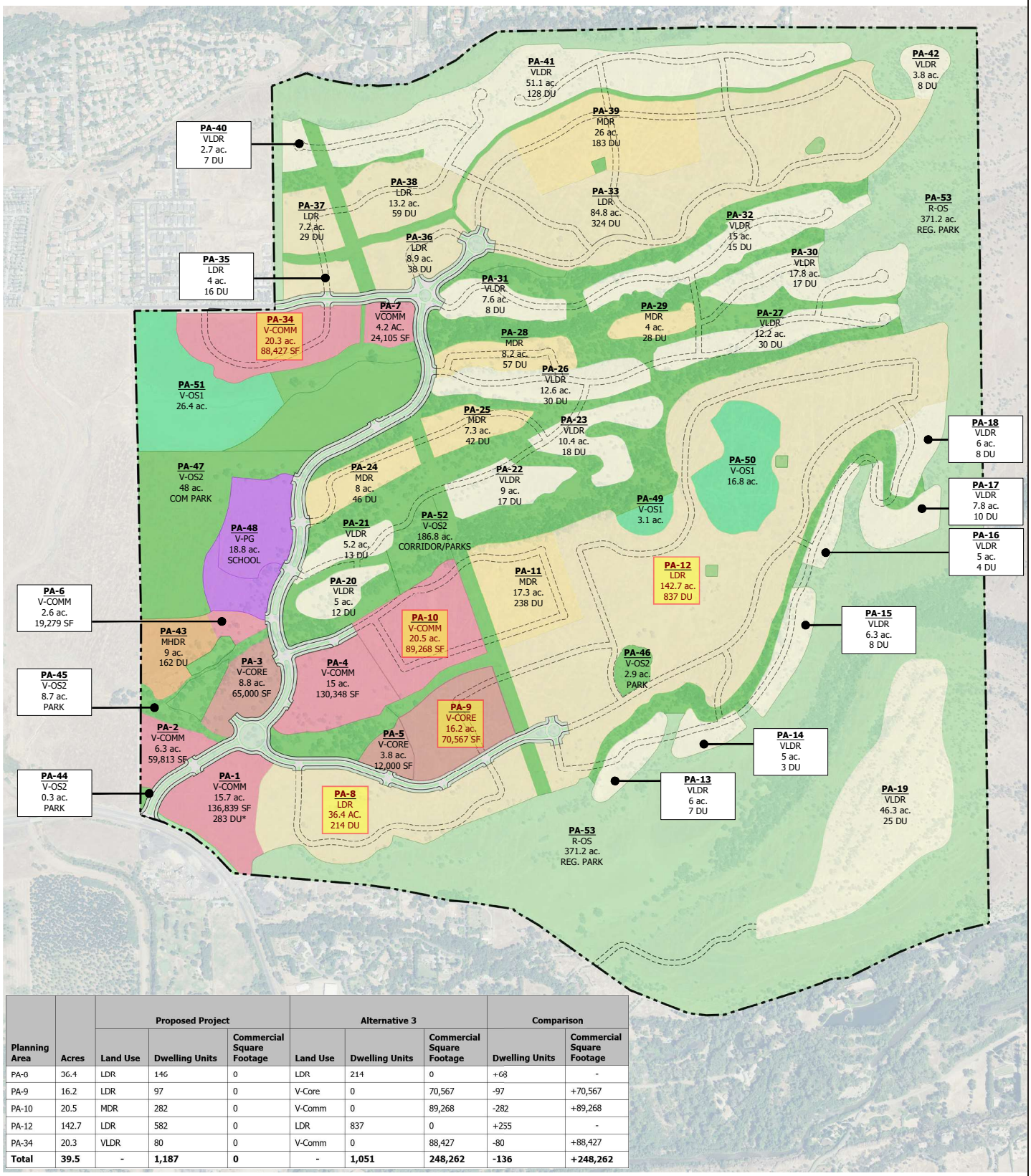

Planning Area	Acres	Proposed Project			Alternative 3			Comparison	
		Land Use	Dwelling Units	Commercial Square Footage	Land Use	Dwelling Units	Commercial Square Footage	Dwelling Units	Commercial Square Footage
PA-8	36.4	LDR	146	0	LDR	214	0	+68	-
PA-9	16.2	LDR	97	0	V-Core	0	70,567	-97	+70,567
PA-10	20.5	MDR	282	0	V-Comm	0	89,268	-282	+89,268
PA-12	142.7	LDR	582	0	LDR	837	0	+255	-
PA-34	20.3	VLDR	80	0	V-Comm	0	88,427	-80	+88,427
Total	**39.5**	**-**	**1,187**	**0**	**-**	**1,051**	**248,262**	**-136**	**+248,262**

SOURCE: City of Chico 2021

FIGURE 6-2

Alternative 3: Increased Commercial Land Use Plan

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Table 6-4. Alternative 3 Land Use Revisions

Planning Area	Acres	Proposed Project			Alternative 3			Total Change to Planning Areas	
		Land Use	*Dwelling Units*	*Commercial Sf*	*Land Use*	*Dwelling Units*	*Commercial Sf*	*Dwelling Units*	*Commercial Sf*
PA-34	20.3	VLDR	80	0	V-Comm	0	88,427	(80)	+88,427
PA-10	20.5	MDR	282	0	V-Comm	0	89,268	(282)	+89,268
PA-12	142.7	LDR	582	0	LDR	837	0	+255	-
PA-9	16.2	LDR	97	0	V-Core	0	70,567	(97)	+70,567
PA-8	36.4	LDR	146	0	LDR	214	0	+68	—
Total	**39.5**	—	**1,187**	**0**	—	**1,051**	**248,262**	**(36)**	**+248,262**

Note: A 10% FAR is assumed for planning purposes for this Alternative.

The planning areas that would be amended from residential to commercial land uses under this Alternative were selected based on their proximity to the other commercial planning areas within the Specific Plan. As shown in Table 6-4, there are 459 residential units (80 Very Low Density Residential [VLDR], 282 Medium Density Residential [MDR] and 97 Low Density Residential [LDR]) that would be either shifted or eliminated to accommodate the increase in commercial uses under this Alternative. Under this Alternative, the 80 VLDR units on PA-34 would be eliminated and 255 of the 282 MDR units on PA-10 would shift to PA-12 for a total of 837 LDR units on PA-12, as shown on Figure 6-2. The remaining 27 MDR units on PA-10 would be eliminated. In addition, 68 of the 97 LDR units on PA-9 would shift to PA-8 for a total of 214 LDR units on PA-8. The remaining 29 LDR units on PA-9 would be eliminated. There would be a loss of 136 units resulting in a slight reduction in the overall number of units to be developed within the Specific Plan area from 2,777 to 2,641, a 5% reduction. Under this Alternative the project's residential density would slightly increase from 4.1 units/acre to 4.3 units/acre and the amount of commercial square footage would increase by 248,262 sf. The acreage for parks, open space, and public uses would remain the same as the proposed project.

Table 6-5 provides a summary of the combined residential and commercial land uses for both the proposed project and Alternative 3.

Table 6-5. Alternative 3 Land Use Summary Comparison Table

	Proposed Project			Alternative 3		
Land Use	*Acres*	*Dwelling Units*	*Density/ Commercial Sf*	*Acres*	*Dwelling Units*	*Density/ Commercial Sf*
Residential						
VLDR	234.7	368	1.6	214.4	288	1.3
LDR	333.6	1,371	4.1	317.4	1,597	5
MDR	91.2	876	9.6	70.7	594	8.4
MHDR	9.0	162	18	9.0	162	18
Subtotal/Average:	*668.5*	*2,777*	*4.1*	*611.5*	*2,641*	*4.3*
Commercial and Office[1]						
V-CORE	12.6	0	77,000	28.8	0	147,567
V-COMM	43.7	0	370,155	84.5	0	547,850
Subtotal/Average	*56.3*	*0*	*447,155*	*113.3*	*0*	*695,417*
Parks, Open Spaces and Public Uses						
V-PG	18.8	—		18.8	—	
V-OS1	46.3	—		46.3	—	
V-OS2	246.7	—		246.7	—	
R-OS	371.2	—		371.2	—	
Subtotal	*683*	—		*683*	—	
Roads						
Project Roadways (Right-of-Way)[2]	40.4	—		40.4	—	
Subtotal	*40.4*	—		*40.4*	—	
Total	**1,448.3**	—		**1,448.3**	—	

Notes:
1 A 10% FAR is assumed for planning purposes for this Alternative.
2 It is assumed a similar amount of land would be designated for roads under this Alternative.

Comparative Analysis of Environmental Effects

The Increased Commercial Alternative is designed to address VMT and related issues, including air quality and GHG emissions by providing more opportunities for residents to shop and obtain services closer to home. A comparison between the environmental effects of the proposed project and the Increased Commercial Alternative is included below. The Alternatives analysis assumes that all applicable mitigation measures for the proposed project would also apply to this Alternative.

Impacts Identified as Being the Same or Similar to the Proposed Project

The Increased Commercial Alternative would develop new uses on an undeveloped site that could potentially result in significant biological resources impacts. As discussed in Section 4.3, Biological Resources, the proposed project would have potentially significant impacts to biological resources including potential impacts to candidate, sensitive, or special-status species; riparian habitat or other sensitive natural communities; protected wetlands; and cumulative impacts to special-status plant and wildlife species. However, all of these impacts would be reduced to less than significant with either coverage as a 'permanent development project' under the future BRCP which would require certain avoidance and minimization measures, or with proposed Mitigation Measures BIO-1 through BIO-10, which require pre-construction surveys, best management practices, and no-net-loss policies. While this Alternative would result in changes to the number of dwelling units and commercial square footage, the overall are of development or project footprint would remain the same as the proposed project, as shown on Figure 6-2. As such, it is anticipated that the same biological resources would be affected by Alternative 3 and the same mitigation measures would be required to reduce biological resources impacts to less than significant, the same as the proposed project.

This Alternative would also involve ground disturbance associated with construction activities and would still require Mitigation Measures CUL-1 through CUL-4 to reduce potential impacts associated with the unintended discovery of archaeological resources, tribal cultural resources, or human remains, the same as the proposed project. There would be no impact to any historic-era resources under the proposed project which would not change under this Alternative. This would also apply to potential impacts to paleontological resources which could also be reduced to less than significant with Mitigation Measure GEO-1.

Similar to the proposed project, Mitigation Measure HAZ-1 would be required to prevent hazardous exposure to construction personnel associated with ACMs or lead-based paints. This Alternative would also require measures for fire prevention and suppression such as those detailed in Mitigation Measure WFIRE-1 and WFIRE-2 to reduce wildfire hazard impacts. Thus, the Increased Commercial Alternative would have less-than-significant impacts regarding hazards and hazardous materials, the same as the proposed project.

Development of this Alternative would occur in the same project footprint as the VESP, as shown in Figure 6-2. Development under this Alternative would be required to comply with existing stormwater regulations including those in the City's Municipal Code and NPDES permit requirements. This Alternative would also be considered a "regulated project" as stated in Chapter 15.50 of the City's Municipal Code, subject to post-construction stormwater management requirements. The VESP development standards also include grading standards to minimize disturbance to the natural terrain, and new flood control features to reduce runoff rates and on- and off-site flooding. It is anticipated this Alternative would include similar development standards to address grading and site disturbance. Overall, impacts to hydrology and water quality under this Alternative would be the same or similar to the proposed project.

Section 4.12, Public Utilities of this Draft EIR explains that the additional need for water supply, wastewater conveyance and treatment, electricity, and natural gas from the proposed project would be provided and would not require new or expanded facilities. Impacts were determined to be less than significant and would not require mitigation. This Alternative would also include a one-million-gallon water tank, the same as the proposed project, which would serve the project area. Two agricultural wells that exist on the property may also be used as a source of water for irrigation and/or water related amenities. This Alternative would result in a slight decrease in residential water demand, but would increase demand for commercial water compared to the proposed project. The WSA prepared for the VESP indicates that the water use factor for residential uses is greater than for commercial uses. Compared to the proposed project, there would be 80 fewer VLDR units, 29 fewer LDR units, and 27 fewer MDR units. This includes the shift of 255 MDR units to LDR units. The table below shows the water use factors and comparison of water use for residential and commercial uses for the proposed project and Alternative 3.

Table 6-6. Alternative 3 Estimated Water Use Comparison

Land Use	Water Use Factor	Estimated Water Use					
		Proposed Project			*Alternative 3*		
Residential	*gpd/du*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*
VLDR	704	368	259,072	290.2	288	202,752	227.11
LDR	504	506	255,024	285.66	732	368,928	413.25
LDR – Senior Housing	406	865	351,190	393.38	865	351,190	393.38
MDR	342	356	121,752	136.38	74	25,308	28.35
MDR – Senior Housing	291	520	151,320	169.5	520	151,320	169.5
MHDR	108	162	17,496	19.6	162	17,496	19.6
	Subtotal	*2,777*	*1,155,854*	*1,294.72*	*2,641*	*1,116,994*	*1,251.19*
Commercial	*gpd/sf*	*Commercial Square Footage*	*Estimated Daily Water Use (gpd/sf)*	*Estimated Water Use per Year (AFY)*	*Commercial Square Footage*	*Estimated Daily Water Use (gpd/sf)*	*Estimated Water Use per Year (AFY)*
V-CORE	0.034	77,000	2,618	2.93	147,567	5,017	5.62
V-COMM	0.034	370,155	12,585.27	14.1	547,850	18,617.72	20.85
	Subtotal	*447,155*	*15,203.27*	*17.03*	*695,417*	*23,634.72*	*26.47*
Total Water Use (AFY)		—	—	**1,311.75**	—	—	**1,277.66**

Note: The WSA prepared for the VESP uses different water use factors for family housing and senior housing. The number of senior housing units for Alternative 3 is assumed to be the same as the proposed project (865 LDR units and 520 MDR units).

As shown in the table above, Alternative 3 would result in slightly less residential water demand but would increase demand for more commercial water. The calculations show that due to the greater water use factor for residential versus commercial uses, Alternative 3 would result in a slight reduction of 34.1 AFY in combined residential and commercial water use. However, it should be noted that the calculation shown is an estimate

for analysis purposes and is not intended to be an accurate representation of water use under Alternative 3. Generally, water use would be similar to the proposed project and would not necessitate expansion of water facilities or exceed available water supplies. Compliance with General Plan Action PPFS-5.2.3 and subdivision improvement requirements (Municipal Code Chapter 18R.08) would ensure that water infrastructure would be available to meet the demand created by new development, and that this Alternative has met all of Cal Water's conditions necessary to provide water service.

As indicated in Section 4.12, wastewater demand for the proposed project was quantified based on the following assumptions: (1) a single family residence produces 288 gallons per EDU per day of wastewater, (2) one multi-family residential unit is equivalent to 0.846 EDU, and (3) all other non-residential uses produce 1,500 gallons of wastewater per acre. Using these assumptions, the wastewater generation for residential and commercial uses for Alternative 3 is compared to the proposed project in Table 6-7, below.

Table 6-7. Alternative 3 Estimated Wastewater Generation

Land Use	Wastewater Generation Rate	Proposed Project		Alternative 3	
		Unit	*Wastewater Generation (gal/day)*	*Unit*	*Wastewater Generation (gal/day)*
Residential: Single Family	288 gal/EDU	2,614 EDU	752,832	2,479 EDU	713,952
Residential: Multi-Family	288 gal/EDU	137 EDU	39,456	137 EDU	39,456
Commercial	1,500 gal/ac	56.3 acres	84,450	113.3 acres	169,950
Total (gal/day or ac)	—	—	**876,738**	—	**923,358**
Total (mgd)	—	—	**0.877**	—	**0.923**

Notes: gal/ac = gallons per acre per day

Similar to the analysis of water demand above, wastewater generation would generally be similar to the proposed project but would be slightly greater due to the increase in commercial uses. The same as the proposed project this Alternative would not necessitate expansion of new facilities or exceed treatment capacity.

PG&E, which supplies electric and natural gas service, is required by the CPUC to update the existing systems to meet any additional demand. This Alternative would also comply with applicable solid waste diversion, reduction, and recycling mandates and would not cause capacity exceedances at the Neal Road Recycling and Waste Facility. Overall, this Alternative would result in the same or similar energy impacts to the proposed project and impacts would remain less than significant.

The Increased Commercial Alternative would reduce the amount of dwelling units (reducing noise from residential uses) but would increase commercial uses (increasing noise from commercial uses) as compared to the proposed project. It is anticipated these changes would not substantially differ from ambient noise conditions under the proposed project. Noise levels could still exceed the City's noise level standards and impact noise-sensitive receptors, resulting in a potentially significant impact. Mitigation Measure NOI-1 would ensure compliance with the City's construction noise level standards while Mitigation Measures NOI-2 through NOI-5 would ensure that noise-sensitive are not exposed to sound levels in excess of City noise thresholds Mitigation Measure NOI-5 would limit unpermitted use of amplified sound equipment at the outdoor recreation and activity areas. Similar to the proposed project, these mitigation measures would reduce impacts to less than significant.

This Alternative would not increase the need for police or fire services as compared to the proposed project such that new or expanded facilities would be necessary. Additionally, this Alternative would introduce slightly fewer new students to the area and school impact fees would fully mitigate any impacts to school services. This Alternative would make no changes to the extensive range of parks, open space, and recreational facilities currently included within the VESP. Impacts would be the same or similar to the proposed project and would continue to be less than significant.

The project site may be affected by future wildfires and development under Alternative 3 may expose future residents to the risk of wildfire hazards. Similar to the proposed project, implementation of firewise guidelines and vegetation management standards such as those in Mitigation Measures WFIRE-1 (construction) and WFIRE-2 (operation) would reduce the risk of fire. This Alternative would also be designed in collaboration with the CFD to ensure adequate emergency response and evacuation procedures. Mitigation Measure WFIRE-3 would address any post-fire flooding, runoff, or slope instability through the use of erosion control techniques, reseeding grasses, and tree removal, if required. Also included in the proposed project, this Alternative would include a permanent, one-million gallon water tank near the eastern boundary of the project site, which would maximize system pressure, ensuring that water pressure would be adequate for fire protection and suppression. Lake features within parks, including the proposed Regional Park and Big Meadows Park, would also provide a potential source of water for wildland fire suppression. Overall, wildfire impacts from this Alternative would be the same or similar to the proposed project and would require mitigation to reduce impacts to less than significant.

Impacts Identified as Being Less Severe than the Proposed Project

As discussed in Section 4.2, Air Quality of this Draft EIR and in the comparative analysis for the No Project/2030 General Plan Alternative, the proposed project would exceed the respective BCAQMD significance thresholds for ROG, NO_x, and PM_{10}. Under the Increased Commercial Alternative, new uses would be introduced that would still generate ROG, NO_x, and PM_{10}. However, this Alternative would be expected to result in a slight reduction in air quality impacts due to the close proximity between residential and commercial areas. The addition of more commercial land uses adjacent to residential land uses would help to reduce vehicular trips, minimize travel distance to commercial centers, and would allow greater opportunities for non-vehicular travel and reduced automobile reliance. The location of commercial centers would also be at the western/southwestern area of the project site, closer to residents outside of the project area near Skyway and East 20th Street. This Alternative would therefore result in a reduction in mobile emissions as compared to the proposed project, which would help to reduce the severity of air quality impacts. The Increased Commercial Alternative would still require implementation of air quality mitigation measures including Mitigation Measures AQ-1 through AQ-8 in order to ensure that impacts are less than significant, but these impacts would still be reduced compared to the proposed project.

The increased accessibility of commercial uses for new residents would also result in a reduction in the amount of GHG emissions generated as compared to the proposed project. As discussed in Section 4.7, Greenhouse Gases, the proposed project would exceed the screening threshold by approximately 23,171 MT CO_2e per year. With the introduction of 2,641 new dwelling units and 695,417 sf of commercial space to an undeveloped site, the Increased Commercial Alternative would still introduce a considerable amount of GHG-generating uses to the site that would exceed the screening threshold. Nonetheless, the addition of more commercial land uses in close proximity to residential land uses would increase the opportunity for residents to shop in the project area rather than drive farther distances to outside stores and commercial areas. The reduction in mobile emissions compared to the proposed project would contribute to lower GHG impacts from

vehicular travel. This Alternative would also be required to comply with Mitigation Measures GHG-1 and GHG-2 in order to further reduce GHG impacts. However, it is anticipated GHG impacts would remain significant and unavoidable, the same as the proposed project.

Development of the Increased Commercial Alternative would require energy resources including electricity, natural gas, and petroleum for the additional commercial uses. Tables 4.5-6 and 4.5-7 in Section 4.5, Energy, show the estimated annual operational electricity and natural gas demand for the proposed project. The information indicates that residential uses would require significantly more electricity and natural gas than commercial uses under the proposed project. This can be attributed to the need for electricity, heating, and cooling at each dwelling unit. The reduction of 136 dwelling units under Alternative 3 would require less electricity and natural gas, and this decrease in energy is expected to exceed the amount of additional energy resources required for the increase in 248,262 sf of commercial uses, given the comparatively low commercial energy demand. Additionally, petroleum consumption would be reduced under Alternative 3 due to the increased availability and accessibility of commercial businesses near project residents. As required for the proposed project, this Alternative would comply with General Plan policies and Title 24 energy efficiency and environmental performance standards, and impacts would be less than significant, the same as the proposed project but the amount of electricity, natural gas and petroleum required would be less than the project.

As discussed in Section 4.13, Transportation, the proposed project would exceed the VMT threshold by 1%. This Alternative would reduce the amount of VMT because of the increased availability of commercial uses to project residents and residents outside of the project area near Skyway and East 20th Street. This Alternative would also implement Mitigation Measure TRAF-2 (TDM program) to reduce external vehicle trips generated by the proposed project. The amount of VMT generated under this Alternative may be slightly less than the project due to the increase in commercial uses in close proximity to residences. Thus, this impact is still less than significant, the same as the proposed project, but the total VMT generated is anticipated would be less than the proposed project.

Impacts Identified as Being More Severe than the Proposed Project

Development of Alternative 3 would primarily occur at the western side of the project site where public views of the site are most available. The planning areas that would be changed from residential to commercial land uses under this Alternative were selected based on their proximity to the other commercial planning areas. This Alternative would increase commercial development at these areas and result in a greater change to public views compared to the proposed project. While there would be a loss of 136 units compared to the proposed project, this visual benefit would not be substantial as residential uses would be more concentrated in central and northern parts of the project area that already contain limited public views. Impacts would continue to be significant and unavoidable, the same as the proposed project even with review and approval of site and architectural plans under Mitigation Measure AES-1. However, the increase in commercial square footage and development in the western portion of the project site would result in slightly more severe impacts to visual character and quality of scenic views as compared to the proposed project.

Relationship to Proposed Project Objectives

The Increased Commercial Alternative would achieve all the project objectives, but some objectives would be achieved at a different extent than the proposed project. This Alternative would develop more employment opportunities through the increase in commercial uses but would provide approximately 5% less housing in response to demographic shifts. This Alternative would still include a variety of other uses such as parks, pedestrian

and bicycle areas, open space and greenways, a school site, and an integrated circulation system which would promote a complete neighborhood and be consistent with the vision included in the 2030 General Plan and the project objectives. Parks would promote outdoor recreation and open space would be used to preserve sensitive resources, consistent with the objectives. Development under this Alternative would be sensitive to natural landforms and terrain consistent with the objectives. Housing diversity would be the same as the proposed project since it is assumed that this Alternative would include the same number of senior housing units.

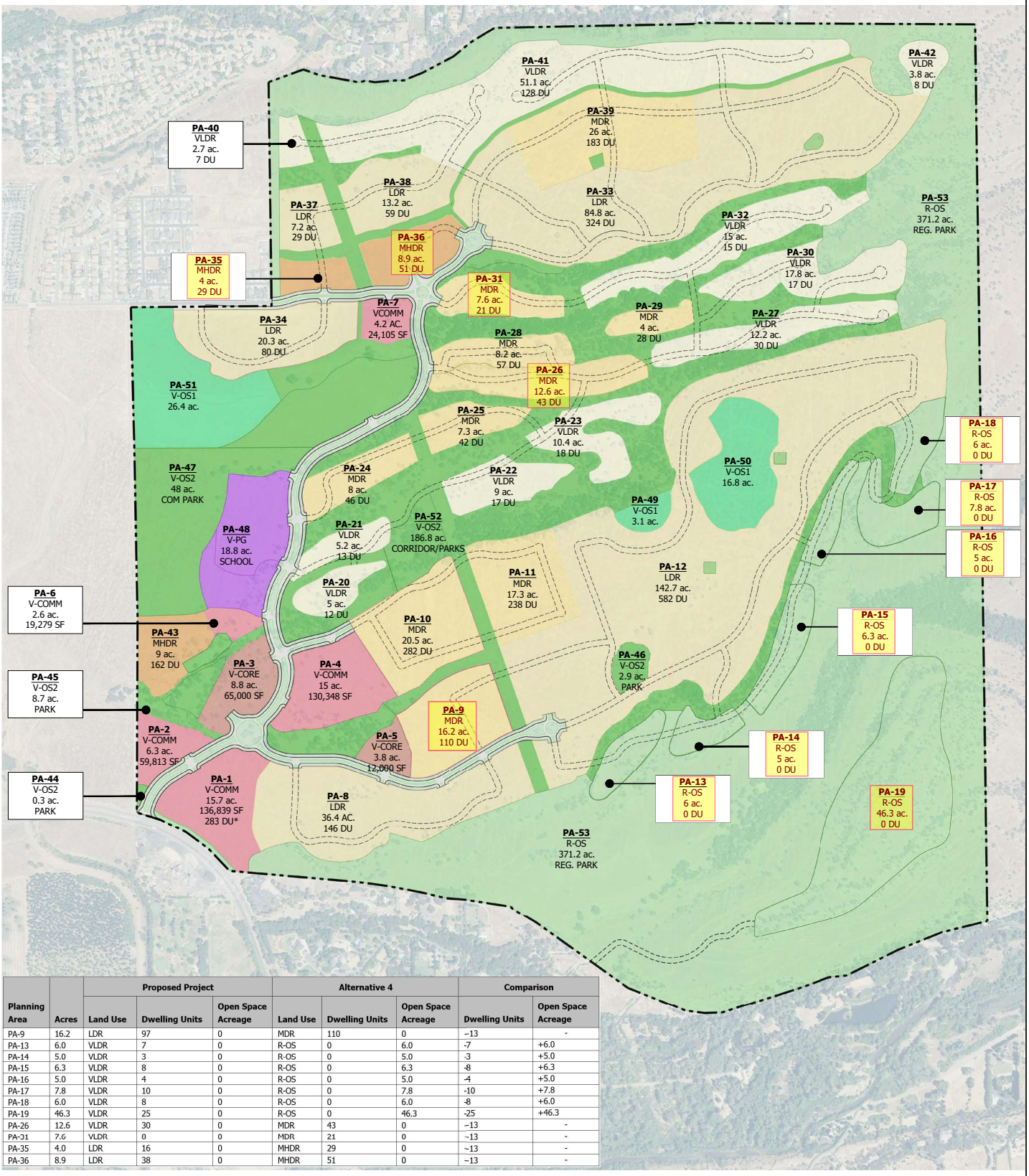
6.3.4 Alternative 4: Increased Open Space and Higher Residential Density

The Increased Open Space and Higher Residential Density Alternative would increase the total amount of land designated Regional Open Space (R-OS) and increase the residential density within certain areas of the Specific Plan, as shown in Table 6-8 and Table 6-9 below and on Figure 6-3. The VLDR land use category encompasses approximately 82 acres in the southeast portion of the Specific Plan area (including the Equestrian Ridge are) and is proposed to accommodate 65 of the 2,777 residential units. Under this Alternative, the 82 acres would be replaced with R-OS and the 65 residential units would be shifted to other planning areas within the Specific Plan, as indicated in Table 6-8 below. The overall amount of R-OS designated land within the Specific Plan area would increase from 371.2 acres to 453.6 acres, the total number of residential units would remain at 2,777 and would include age-restricted units, and the total amount of commercial space would remain at 447,155 sf.

Table 6-8. Alternative 4 Land Use Revisions

Planning Area	Acres	Proposed Project			Alternative 4			Total Change to Planning Areas	
		Land Use	*Dwelling Units*	*Open Space Acreage*	*Land Use*	*Dwelling Units*	*Open Space Acreage*	*Change in Dwelling Units*	*Open Space Acreage*
PA-13	6.0	VLDR	7	0	R-OS	0	6.0	(7)	+6.0
PA-14	5.0	VLDR	3	0	R-OS	0	5.0	(3)	+5.0
PA-15	6.3	VLDR	8	0	R-OS	0	6.3	(8)	+6.3
PA-16	5.0	VLDR	4	0	R-OS	0	5.0	(4)	+5.0
PA-17	7.8	VLDR	10	0	R-OS	0	7.8	(10)	+7.8
PA-18	6.0	VLDR	8	0	R-OS	0	6.0	(8)	+6.0
PA-19	46.3	VLDR	25	0	R-OS	0	46.3	(25)	+46.3
PA-26	12.6	VLDR	30	0	MDR	43	0	+13	—
PA-31	7.6	VLDR	8	0	MDR	21	0	+13	—
PA-9	16.2	LDR	97	0	MDR	110	0	+13	—
PA-35	4.0	LDR	16	0	MHDR	29	0	+13	—
PA-36	8.9	LDR	38	0	MHDR	51	0	+13	—
Total	**131.7**	**—**	**254**	**0**	**—**	**254**	**82.4**	**0**	**+82.4**

As previously mentioned, the 65 units eliminated from the 82.4 acres of the VLDR designated lands identified above, would be shifted to other planning areas within the Specific Plan. To accommodate this shift, this Alternative would replace approximately 20 acres of VLDR from PA-26 and PA-31 with MDR and approximately 29.1 acres of LDR from PA-9, PA-35, and PA-36 with 16.2 acres of MDR and 12.9 acres of MHDR. These changes are shown on Figure 6-3 and summarized in Table 6-9 below.



Planning Area	Acres	Proposed Project			Alternative 4			Comparison	
		Land Use	Dwelling Units	Open Space Acreage	Land Use	Dwelling Units	Open Space Acreage	Dwelling Units	Open Space Acreage
PA-9	16.2	LDR	97	0	MDR	110	0	–13	-
PA-13	6.0	VLDR	7	0	R-OS	0	6.0	-7	+6.0
PA-14	5.0	VLDR	3	0	R-OS	0	5.0	-3	+5.0
PA-15	6.3	VLDR	8	0	R-OS	0	6.3	-8	+6.3
PA-16	5.0	VLDR	4	0	R-OS	0	5.0	-4	+5.0
PA-17	7.8	VLDR	10	0	R-OS	0	7.8	-10	+7.8
PA-18	6.0	VLDR	8	0	R-OS	0	6.0	-8	+6.0
PA-19	46.3	VLDR	25	0	R-OS	0	46.3	-25	+46.3
PA-26	12.6	VLDR	30	0	MDR	43	0	–13	-
PA-31	7.6	VLDR	0	0	MDR	21	0	–13	-
PA-35	4.0	LDR	16	0	MHDR	29	0	–13	-
PA-36	8.9	LDR	38	0	MHDR	51	0	–13	-

SOURCE: City of Chico 2021

FIGURE 6-3

Alternative 4: Increased Open Space and Higher Residential Density Land Use Plan

Valley's Edge Specific Plan Project

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Table 6-9. Alternative 4 Land Use Summary Comparison Table

Land Use	Proposed Project			Alternative 4		
	Acres	*Dwelling Units*	*Density*	*Acres*	*Dwelling Units*	*Density*
Residential						
VLDR	234.7	368	1.6	132.1	265	2
LDR	333.6	1,371	4.1	304.5	1,220	4
MDR	91.2	876	9.6	127.6	1,050	8.2
MHDR	9.0	162	18	21.9	242	11.1
Subtotal/Average:	*668.5*	*2,777*	*4.1*	*586.1*	*2,777*	*4.7*
Commercial and Office						
V-CORE	12.6	0	77,000	12.6	0	77,000
V-COMM	43.7	0	370,155	43.7	0	370,155
Subtotal/Average	*56.3*	*0*	*447,155*	*56.3*	*0*	*447,155*
Parks, Open Spaces and Public Uses						
V-PG	18.8	—		18.8	—	
V-OS1	46.3	—		46.3	—	
V-OS2	246.7	—		246.7	—	
R-OS	371.2	—		453.6	—	
Subtotal	*683*	—		*765.4*	—	
Total	**1,407.8**	—		**1,407.8**	—	

Note: Project roadways are not included in this table because the acreage of roadways to be removed under Alternative 4 is unknown.

As shown in Table 6-9, the addition of 65 units to the 189 units proposed in the above-identified planning areas within the Specific Plan would result an overall increase of residential density from 4.1 units/acre to 4.7 units/acre.

Comparative Analysis of Environmental Effects

Alternative 4 is designed primarily to address aesthetics, biological resources, and wildfire impacts by moving residential land uses proposed in the southeastern area of the site to other areas, thereby increasing the open space buffer and preventing resources in those areas to be impacted from construction and operation. Compared to the proposed project, this Alternative would also benefit from eliminating development within areas that contain slopes, which would reduce grading and potential soil erosion impacts, and would benefit from increasing residential density which would result in less VMT and VMT-related (air quality, GHG) impacts. A comparison between the environmental effects of the proposed project and Alternative 4 is included below. The Alternatives analysis assumes that all applicable mitigation measures for the proposed project would also apply to this Alternative.

Impacts Identified as Being the Same or Similar to the Proposed Project

Demolition of the on-site ranch buildings would require Mitigation Measure HAZ-1 to prevent hazardous exposure of construction personnel associated with ACMs or lead-based paints. This Alternative would be required to comply with existing stormwater regulations including those in the City's Municipal Code and NPDES permit requirements, the same as the project.

The change in residential density would result in changes wastewater generation. Using the assumptions in Section 4.12, Public Utilities, demand for wastewater treatment for Alternative 4 is compared to the proposed project in Table 6-10, below.

Table 6-10. Alternative 4 Estimated Wastewater Generation

Land Use	Wastewater Generation Rate	Proposed Project		Alternative 4	
		Unit	*Wastewater Generation (gal/day)*	*Unit*	*Wastewater Generation (gal/day)*
Residential: Single Family	288 gal/EDU	2,614 EDU	752,832	2,535 EDU	730,080
Residential: Multi-Family	288 gal/EDU	137 EDU	39,456	204.73 EDU	58,962.24
Total (gal/day or ac)	—	—	**792,288**	—	**789,042.24**
Total (mgd)	—	—	**0.792**	—	**0.789**

Notes: gal/ac = gallons per acre per day

As shown in Table 6-10, wastewater generation from residential uses would generally be similar to the proposed project and would not necessitate expansion of new facilities or exceed treatment capacity.

The Alternative would be served by PG&E for electric and natural gas service which is required by the CPUC to update existing systems to meet any additional demand, would comply with applicable solid waste diversion, reduction, and recycling mandates, and would not exceed capacity at the Neal Road Recycling and Waste Facility.

Alternative 4 would maintain the amount of dwelling units and non-residential uses (besides open space) from the proposed project. The increase in residential density could cause slightly higher ambient noise levels but this would not be considered substantial. This Alternative would require compliance with Mitigation Measures NOI-1 through NOI-5 to ensure that construction and operational noise would not exceed City noise thresholds or affect off-site sensitive receptors.

This Alternative would not increase the need for police or fire services because demand would generally be the same as the proposed project. School impact fees would fully mitigate any impacts to school services from addition of new students.

Compared to the proposed project, demand for electricity and natural gas is anticipated to be similar due to the same amount of residential and non-residential uses, besides open space. Petroleum consumption may be slightly reduced under this Alternative due to the increased density of housing and elimination of VLDR units at the far southeastern area of the site, but this reduction is not anticipated to be significant and overall energy demand would be similar to the proposed project.

Impacts Identified as Being Less Severe than the Proposed Project

Under this Alternative, the amount of undeveloped land converted to a developed environment would be reduced as compared to the proposed project. The elimination of all VLDR residential uses in the southeastern portion of the plan area would create a larger open space buffer along Skyway and Honey Run Road and would result in a better-defined urban edge to the central portion of the plan area. The shifting of residential units

from the southern portion of the plan area would result in more condensed residential development to the north and a reduction in the overall development footprint. As such, this Alternative would result in a reduction in impacts to existing views of the site as compared to the proposed project and would help to reduce impacts to important visual resources such as mature trees and rock outcroppings. Nonetheless, development would be introduced into an area that is presently undeveloped, which would change the visual character scenic views of the area resulting in significant and unavoidable impacts, the same as the proposed project.

Similar to Alternative 3, this Alternative would be expected to result in a reduction in air emissions associated with project operation. The shifting of residential units from the southern portion of the plan area would result in more condensed residential development to the north, closer to commercial areas and the rest of the City, and a reduced development footprint. In addition, the roadway connection from Honey Run Road to the VLDR (Equestrian Ridge) area would no longer be required. This Alternative would result in a reduction in mobile GHG emissions, as compared to the proposed project, due to less travel distance required for residents to visit commercial areas and the rest of the City, which would help to reduce the severity of the GHG impact. Alternative 4 would potentially still require implementation of air quality measures including Mitigation Measures AQ-1 through AQ-8 in order to ensure that impacts are less than significant, but the severity of these impacts would be reduced compared to the proposed project. This Alternative would also comply with Mitigation Measures GHG-1 and GHG-2 in order to further reduce GHG impacts. Because of the introduction of new development to the area, GHG impacts would be reduced to less-than-significant with mitigation the same as the project, but would be less severe under this Alternative.

The replacement of 82.4 acres of lands proposed for residential development with open space would help to protect on-site features in those areas, preserve sensitive habitat, provide additional safeguards for natural drainages, allow for increased wildlife movement, and protect wetlands and other aquatic features. There would be less vegetation and tree removal required within the area, as compared to the proposed project. Under the proposed project, 80% of the total oak tree canopy would be protected and preserved in parks, open space, and/or other areas where avoidance and preservation can be monitored and managed. Under this Alternative with the proposed preservation of additional open space and oak woodlands, approximately 85% of the oak canopy in the plan area would be preserved as permanent open space. The protection of additional oak woodlands as open space would help to further reduce impacts to sensitive species and habitat within the area. Additionally, the roadway connection from Honey Run Road to the Equestrian Ridge area as well as proposed roadways along the creek in the southern portion of the site would no longer be required which would reduce the need for creek crossings in sensitive areas, reducing impacts to wetlands and riparian habitat. The Alternative would also comply with applicable Mitigation Measures proposed for the project to ensure potential impacts to biological resources would be reduced.

Similar to the proposed project and as described in the comparative analysis for Alternatives 2 and 3, this Alternative would involve ground disturbance associated with construction activities and would require Mitigation Measures CUL-1 through CUL-4 and GEO-1 to reduce the impacts associated with unintended discovery of archaeological resources, tribal cultural resources, human remains, and paleontological to less than significant, the same as the project. However, the amount of ground disturbance would be less compared to the proposed project as there would be no construction on the slopes of the Equestrian Ridge area which would require less grading activity. There would also be no construction associated with the road connection to Honey Run Road included in the proposed project.

This Alternative would increase the amount of open space compared to the proposed project; however, impacts to the provision of parks and open space would remain less than significant the same as the proposed project. Because there would be an increase in the total amount of land designated for parks and open space the severity of the impact is reduced as compared to the project.

The change in residential density would result in some changes to water demand. Under this Alternative, 65 VLDR units from the southeastern area of the site would be relocated to central and northwestern areas of the project site where residential uses are already proposed. To accommodate this shift, land uses at these areas would be MDR and MHDR. These land use changes are shown on Figure 6-3. Even though this Alternative would maintain 2,777 residential units, the water use factor would depend on the density of the residential planning areas. The increase in open space would not affect water demand because these areas are proposed to be part of the regional park, which is not irrigated. The table below shows the water use factors and comparison of water use for residential uses for the proposed project and Alternative 4.

Table 6-11. Alternative 4 Estimated Water Use Comparison

Land Use	Water Use Factor	Estimated Water Use					
		Proposed Project			*Alternative 4*		
Residential	*gpd/du*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*	*Dwelling Units*	*Estimated Daily Water Use (gpd)*	*Estimated Water Use per Year (AFY)*
VLDR	704	368	259,072	290.2	265	186,560	208.97
LDR	504	506	255,024	285.66	355	178,920	200.42
LDR – Senior Housing	406	865	351,190	393.38	865	351,190	393.38
MDR	342	356	121,752	136.38	530	181,260	203.04
MDR – Senior Housing	291	520	151,320	169.5	520	151,320	169.5
MHDR	108	162	17,496	19.6	242	26,136	29.28
	Total	—	—	**1,294.72**	—	—	**1,204.59**

Note: The WSA prepared for the VESP uses different water use factors for family housing and senior housing. The number of senior housing units for Alternative 4 is assumed to be the same as the proposed project (865 LDR units and 520 MDR units).

As shown in the table above, Alternative 4 would result in approximately 90.13 AFY less of residential water use. This is an approximately 6% reduction in water use. It should be noted that the calculation shown is an estimate for analysis purposes *only* and is not intended to be an accurate representation of water use under Alternative 4. However, it is anticipated that water use would be slightly less than the proposed project and would not necessitate expansion of water facilities or exceed available water supplies. It is also assumed that this Alternative would comply with General Plan Action PPFS-5.2.3 and subdivision improvement requirements (Municipal Code Chapter 18R.08) to ensure adequate water service for the project. Impacts would continue to be less than significant but less severe than the proposed project.

As noted in Chapter 4.13, Transportation, of this Draft EIR, the proposed project has a lower VMT per service population relative to the regional average, due to many factors such as the inclusion of MHDR uses. However, the proposed project would still exceed the VMT threshold by 1%. Alternative 4 would move LDR units planned for the southeastern area of the site to areas in the central and northwestern portion of the site, increasing overall residential density and the number of MHDR dwelling units. The increase in residential density and location of units closer to commercial areas would reduce VMT compared to the proposed project. To further reduce VMT, this Alternative would also implement Mitigation Measure TRAF-2 which would reduce external vehicle trips generated by the project. Impacts associated with VMT are anticipated to be slightly less server than the proposed project due to the concentration of development in the central and northern portion of the plan area.

The reallocation of VLDR units from the southern portion of the site to other residential areas, as indicated in Table 6-8, would also help to reduce impacts associated with wildfire risks. As noted in the Wildfire section of this Draft EIR, wildfires typically burn up slopes faster and more intensely than along flat ground and steeper slopes result in a faster moving fire. Moderate or steep slopes greater than 20%, are considered a higher risk for wildfires. Fires also travel in the direction of the ambient wind, which usually flows uphill. Under the proposed project, development is mostly proposed within the flatter areas of the site with the exception of VLDR uses proposed on the mesa in the southeast corner of the site, accessible only from Honey Run Road, and the VLDR uses located north of the mesa and riparian corridor on slopes ranging from 10% to over 25%. This Alternative would eliminate those residential units and redistribute them to the flatter residential areas farther to the north. The shifting of units and consolidation of the development footprint and eliminating development within areas that contain slopes, would reduce impacts associated with wildfire risks. In addition, should a fire occur within the Specific Plan area, firefighters would be able to better defend residential areas that are more clustered together in urban areas and accessible from multiple roadways. Similar to the proposed project, implementation of firewise guidelines and vegetation management standards such as those in Mitigation Measures WFIRE-1 (construction) and WFIRE-2 (operation) would reduce the risk of fire and Mitigation Measure WFIRE-3 would address any post-fire flooding, runoff, or slope instability. Also included in the proposed project, this Alternative would include a permanent, one-million-gallon water tank to ensure that water pressure would be adequate for fire protection and suppression. Lake features within parks, including the proposed Regional Park and Big Meadows Park, would also provide a potential source of water for wildland fire suppression. Impacts would be less severe than the proposed project due to the reallocation of VLDR units from sloped areas and would be further reduced through compliance with Mitigation Measures WFIRE- through WFIRE-3.

Impacts Identified as Being More Severe than the Proposed Project

There would be no impacts identified as being more severe than the proposed project.

Relationship to Proposed Project Objectives

Alternative 4 would essentially achieve all of the project objectives. Similar to the conceptual plan for SPA-5 in the 2030 General Plan, there would be no residential uses proposed in the southeastern Equestrian Ridge area. This Alternative would provide the same amount of residential and non-residential uses as the proposed project and would therefore achieve those project objectives to the same extent. Alternative 4 would increase the open space area and therefore achieve the objective of using open space to preserve and protect resources to a greater extent than the proposed project. Housing diversity would be the same as the proposed project since it is assumed that this Alternative would include the same number of senior housing units.

6.4 Summary Matrix

A matrix displaying the major characteristics and significant environmental effects of each Alternative is provided in Table 6-12 to summarize the comparison with the proposed project.

Table 6-12. Summary Matrix

Environmental Issue	Proposed Project Impacts	Alternative 1: No Project/No Development	Alternative 2: No Project/ 2030 General Plan	Alternative 3: Increased Commercial	Alternative 4: Increased Open Space and Higher Density
Aesthetics	SU	NI ▼	SU ▼	SU ▲	SU ▼
Air Quality	LTS	NI ▼	LTS ▼	LTS ▼	LTS ▼
Biological Resources	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Cultural and Tribal Cultural Resources	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Energy	LTS	NI ▼	LTS ▼	LTS ▼	LTS –
Geology and Soils	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Greenhouse Gas Emissions	SU	NI ▼	LTS ▼	LTS ▼	LTS ▼
Hazards and Hazardous Emissions	LTS	NI ▼	LTS –	LTS –	LTS –
Hydrology and Water Quality	LTS	NI ▼	LTS ▼	LTS –	LTS –
Noise	LTS	NI ▼	LTS ▼	LTS –	LTS –
Public Services	LTS	NI ▼	LTS ▼	LTS –	LTS –
Recreation	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Public Utilities	LTS	NI ▼	LTS ▼	LTS –	LTS ▼
Transportation and Circulation	LTS	NI ▼	LTS ▼	LTS ▼	LTS ▼
Wildfire	LTS	NI ▼	LTS ▼	LTS –	LTS ▼

Notes:
▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
– Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.
NI = No impact
LTS = Less-than-significant impact
SU = Significant and unavoidable impact

6.5 Environmentally Superior Alternative

As indicated in Table 6-12, the No Project/No Development Alternative would result in the least environmental impacts and would be the environmentally superior alternative because it would avoid all impacts associated with the proposed project for all resource areas. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Alternative 2 assumes development would occur consistent with the 2030 General Plan. Under this Alternative, 13 out of 14 resource areas evaluated would result in reduced impacts compared to the proposed project. Alternative 2 is also considered a No Project Alternative and therefore another environmentally superior alternative must be identified. In this case, the environmentally superior alternative is the Increased Open Space and Higher Residential Density Alternative, or Alternative 4 because it would slightly reduce the potential for impacts in seven out of 14 (half) of the resource areas evaluated. However, it is important to note that all of the impacts under the proposed project, with the exception of significant and unavoidable Aesthetics and Greenhouse Gas impacts, would be less than significant or would be reduced to a less-than-significant level with implementation of mitigation measures. Selection of Alternative 4 would reduce the severity of the Aesthetics and Greenhouse Gas impacts but would not be capable of substantially reducing these impacts such that they would be less than significant.

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