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# Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone Draft Environmental Impact Report

State Clearinghouse No. 2016062049

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**Lead Agency:**

City of Chico  
Community Development Department, Planning Division  
411 Main Street, 2<sup>nd</sup> Floor  
Chico, CA 95928

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April 2018





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## LIST OF ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
Af/yr	acre-feet per year
APE	Area of Potential Effect
AST	Aboveground Storage Tank
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
Bcf	Billion cubic feet
BCM	Butte County Meadowfoam
BMPs	Best Management Practices
BRCP	Butte Regional Conservation Plan
CalARP	California Accidental Release Prevention
CAL EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
Cal Water	California Water Service Company
CARD	Chico Area Recreation District
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CMC	Chico Municipal Code
CMU	Commercial Mixed Use
CNDDB	California Native Diversity Database
CNPS	California native Plant Society
Corps	Army Corps of Engineers
CPTED	Crime Prevention Through Environmental Design
CRHR	California Register of Historical Resources
CSU	California State University
CUPA	Certified Uniform Program Agency
CUSD	Chico Unified School District
CVWB	Central Valley Water Board
CWA	Clean Water Act
DOF	California Department of Finance
DOT	Department of Transportation
DTSC	Department of Toxic Substances
DWR	California Department of Water Resources
FESA	Federal Endangered Species Act
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FMMP	Farmland Mapping and Monitoring Program
HCP	Habitat Conservation Plan
HMMP	Hazardous Materials Management Plans
KOP	Key Observation Points
MBTA	Migratory Bird Treaty Act



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MHFHSZ	Moderately High Fire Hazard Severity Zone
mgd	Million Gallon Per Day
NAHC	Native American Heritage Commission
NCCP	National Community Conservation Planning
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NHPA	National Historic Preservation Act
OSHA	Division of Occupational Safety and Health
PG&E	Pacific Gas & Electric
Porter-Cologne Act	Porter Cologne Water Quality Control Act
PRC	Public Resources Code
PRMP	Parks and Recreation Master Plan
RCO	Resource Constrain Overlay
RCRA	Resource Conservation and Recovery Act
RHNP	Regional Housing Needs Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SHPO	State Historic Preservation Office
SOP	Special Planning Area
SPCC	Spill Prevention Control and Countermeasure
SPRR	Southern pacific Railroad
SWMP	Storm Water Management Program
SWRCB	State Water Resources Control Board
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VELB	Valley Elderberry Longhorn Beatle
VPFS	Vernal Pool Fairy Shrimp
VPTS	Vernal Pool Tadpole Shrimp
WDR	Waste Discharge Requirements
WPCP	Water Pollution Control Plant
WPD	Water Permits Division

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## I. INTRODUCTION

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### A. INTRODUCTION

The subject of this Draft Environmental Impact Report (“EIR” or “Draft EIR”) is the proposed Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone (State Clearinghouse No. 2016062049) (“proposed project”). City of Chico Community Development Department (“City”) is the lead agency under the California Environmental Quality Act (“CEQA”) Cal. Public Resources Code, § 21000 et seq.). The City of Chico Community Development Department Planning Division administers the process by which environmental documents for private projects are prepared and reviewed. On the basis of these procedures, it was determined that the proposed project may have a significant effect on the environment, and that an EIR should be prepared.

This Draft EIR meets legal requirements of CEQA and discloses environmental information concerning the proposed projects and invites all interested parties to comment on that information and the proposed projects. This Draft EIR also provides state, federal and local decision makers with detailed information concerning potential environmental impacts associated with the proposed projects and project alternatives.

### B. PURPOSE OF THE EIR

The City of Chico has commissioned this Draft EIR for the proposed project for the following purposes:

- To satisfy CEQA requirements.
- To inform the general public; the local community; and responsible, trustee, and state and federal agencies of the nature of the proposed project, its potentially significant environmental effects, feasible mitigation measures to mitigate those effects, and its reasonable and feasible alternatives.
- To enable the City to consider the environmental consequences of approving the proposed project.
- For consideration by responsible agencies in issuing permits and approvals for the proposed project.

As described in CEQA and the CEQA Guidelines, public agencies are charged with the duty to avoid or substantially lessen significant environmental impacts, where feasible. In discharging this duty, a public agency has an obligation to balance the project’s significant impacts on the environment with other conditions, including economic, social, technological, legal and other benefits. This Draft EIR is an informational document, the purpose of which is to identify the potentially significant impacts of the proposed project on the environment and to indicate the

manner in which those significant impacts can be avoided or significantly lessened; to identify any significant and unavoidable adverse impacts that cannot be mitigated; and to identify reasonable and feasible alternatives to the proposed project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

The lead agency is required to consider the information in the EIR, along with any other relevant information, in making its decision on the proposed project. Although the EIR does not determine the ultimate decision that will be made regarding implementation of the project, CEQA requires the City of Chico to consider the information in the EIR and make findings regarding each significant effect in the EIR.

This Draft EIR was prepared in accordance with Section 15151 of the CEQA Guidelines which defines the standards for EIR adequacy:

*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 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 would 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.*

## **C. PROPOSED PROJECT**

The applicant for the proposed project is Epick Homes ("Applicant"). Its office is located at 901 Bruce Road, Suite 100, Chico, California 95928. As described in more detail in Section III (Project Description), the proposed project involves a subdivision of the 313-acre project site ("project site") into combination of open space, public right-of-way, park, single-family residential standard lots, single-family residential half-acre lots, multi-family residential, and commercial uses. The proposed project also includes zone changes and General Plan Amendments to establish Primary Open Space and to reconfigure the Residential and Commercial designations throughout the site.

## **D. LEAD AGENCY DETERMINATION**

The City of Chico is designated as the lead agency for the project. CEQA Guidelines Section 15367 defines the lead agency as ". . . the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this Draft EIR in the decision-making or permit process and consider the information in this Draft EIR along with other information that may be presented during the CEQA process.

This Draft EIR was prepared by WRA Inc., an environmental consultant. Prior to public review, it was extensively reviewed and evaluated by the City of Chico. This Draft EIR reflects the independent judgment and analysis of the City of Chico as required by CEQA. Lists of

organizations and persons consulted and the report preparation personnel are provided in Section VIII (Preparers of the EIR and Persons Contacted) of this Draft EIR.

## **E. EIR REVIEW PROCESS**

### **Notice of Preparation**

Upon review of the application for the proposed project, the City of Chico determined that the project has the potential to result in potentially significant environmental impacts and therefore an EIR should be prepared. In accordance with Section 15082 of the CEQA Guidelines, the City prepared a Notice of Preparation ("NOP") for this Draft EIR (Appendix A). The NOP was circulated on June 20, 2016, to local, State and Federal agencies, and nearby property owners until July 21, 2016 for the statutory 30-day public review period. The NOP provided a general description of the proposed project and a summary of the main regulations and permit conditions applicable to the development and operation of the proposed project. Additionally, an NOP scoping meeting was held on July 12, 2016 at the City of Chico City Council Chambers. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP and issues raised by agencies and the public in response to the NOP. The NOP is contained in Appendix A of this Draft EIR. Commenters are listed in Table I-1 and comment letters provided in Appendix B of this Draft EIR.

**Table I-1 NOP Comment Letters**

<b>Status</b>	<b>Affiliation</b>	<b>Signatory</b>
Public Agencies	Butte County Department of Public Works	Thomas A. Fossum, P.E., Deputy Director
	Butte County Air Quality Management District	Jason Mandly, Associate Air Quality Planner
	Central Valley Regional Water Quality Control Board Storm Water & Water Quality Certification Unit	Scott A. Zaitz, R.E.H.S
	California Department of Fish and Wildlife (CDFW), North Central Region/Region 2	Tina Bartlett, Regional Manager
	California Department of Transportation (Caltrans) District 3	Susan Zanchi, Branch Chief
	Chico Unified School District	Julie Kistle
Private Parties	AquAlliance	Barbara Vlamis, Executive Director
	Butte Environmental Council	Natalie Carter, Executive Director
	Parkhurst Neighborhood Association	John White
	Chico Velo Cycling Club	Janine Rood, Executive Director
	North States Vernal Pool Landscapes and Recovery Plan Implementation Group	Barbara Castro, Robert Schlising, and Barbara Vlamis
	Bungalow	Christopher Michaels
	Vernal Pool Recovery Plan Implementation	Barbara Castro

Status	Affiliation	Signatory
	Working Group	
	Aqu Alliance	Norm Todenhagen
	Private Individuals	William & Carol Jemison
	Private Individual	Ken D'Arezzo
	Private Individuals	Brad Chester & Michele Contestable
	Private Individual	Connie Adams
	Private Individuals	Joe and Jessica Giannola
	Private Individual	Laurinda Corron
	Private Individuals	Paul and Kathy Coots
	Private Individual	Michael Genga
	Private Individual	Carolyn Hana
	Private Individual	Lydia & Agurkis
	Private Individual	Larry Levin
	Private Individual	Russ Thayne
	Private Individual	Jim Matthews
	Private Individuals	Louis & Stephanie Brooner
	Private Individual	William M. Jemison
	Private Individual	Brent McCarthy
	Private Individuals	Brad & Michele Chester
	Private Individual	Gary Daughetry
	Private Individual	Kathleen Faith
	Friends of Butte Creek	Patty Moriarty
	Private Individual	Lydia Agurkis
	Private Individual	Marcia L. Tarabin

Status	Affiliation	Signatory
	Private Individual	Melanie Kendrick
	Private Individual	James Brobeck
	Private Individual	Jim Matthews
	Private Individual	Sherry Staser
	Private Individual	Elizabeth Devereaux
	Private Individual	Marion Larsen
	Private Individual	Caroline Burkett
	Private Individual	Barbara O'Brien
	Private Individual	Joe Giannola
	Private Individual	Jacob Sams
	Private Individual	Paul Coots
Source: City of Chico, 2016		



## Environmental Issues to Be Analyzed In Draft EIR

Pursuant to Section 15063 of the CEQA Guidelines, an Initial Study was prepared for the proposed project which concluded that the project could result in potentially significant environmental impacts and that an EIR would be required (Appendix A). The Initial Study also identified which environmental impact topics required detailed analysis in the Draft EIR. Based upon the conclusions of the Initial Study, the following environmental impact topics are analyzed in detail in the Draft EIR:

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

Refer to Section IV.A (Impacts Found to be Less Than Significant) for a discussion why other environmental impact topics are not analyzed in detail in the Draft EIR

## Environmental Review Process

The Draft EIR will be circulated for review by the public and other interested parties, agencies, and organizations for 45 days. Comments of the adequacy of the Draft EIR will be accepted during this 45-day period. All comments or questions about the Draft EIR should be addressed to:

City of Chico  
Community Development Department  
Attn: Mike Sawley, AICP, Senior Planner  
411 Main Street, 2<sup>nd</sup> Floor  
Post Office Box 3420  
Chico, CA 95928  
[mike.sawley@Chicoca.gov](mailto:mike.sawley@Chicoca.gov)

## Final EIR and Project Approvals

Following the close of the 45-day public and agency comment period, responses to all substantive comments on the Draft EIR will be prepared for publication in the Final EIR. The Final EIR will be prepared as a separate document from the Draft EIR, and will be considered by City of Chico Planning Commission and City Council at public hearings and certified by the City Council if it is determined to comply with CEQA. The Final EIR will be available for public review prior to the City of Chico's consideration of certifying the Final EIR.

Section 15204(a) (Focus of Review) of the CEQA Guidelines helps the public and agencies to focus their review of environmental documents and their comments to lead agencies. Case law has held that the lead agency is not obligated to undertake every suggestion given them, provided that the agency responds to significant environmental issues and makes a good faith effort at disclosure. Section 15204.5(a) of the CEQA Guidelines clarifies this for reviewers by stating:

*In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.*

This guideline encourages reviewers to examine the sufficiency of the environmental document, particularly in regard to significant effects, and to suggest specific mitigation measures and project alternatives. Given that an effect is not considered significant in the absence of substantial evidence, subsection (c) advises reviewers that comments should be accompanied by factual support. Section 15204(c) states:

*Reviewers should explain the basis for their comments, and, should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence.*

## **CEQA Findings and Mitigation Monitoring**

CEQA and the CEQA Guidelines require lead agencies to “adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment” (CEQA Guidelines Article 7, Sections 15091(d) and 15097). Proposed mitigation measures have been identified in the Initial Study and Draft EIR, presented in language that will facilitate establishment of a monitoring program. The monitoring program must be designed to ensure compliance during project implementation. The Mitigation Monitoring and Reporting Program (“MMRP”) for the project will be prepared as part of the Final EIR.

## **F. LEVELS OF SIGNIFICANCE**

This EIR uses a variety of terms to describe the levels of significance of adverse impacts identified during the course of the environmental analysis. The following are definitions of terms that may be used in this EIR:

- **Less-than-significant impact:** Impacts that are adverse, but that do not exceed the specified standards of significance.
- **Less-than-significant impact with mitigation:** Impacts that exceed the defined standards of significance and that can be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.
- **Significant and unavoidable impact:** Impacts that exceed the defined standards of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.

## G. ORGANIZATION OF THE DRAFT EIR

This Draft EIR is organized into the following main sections:

- Section I-Introduction: This section provides an introduction and overview describing the purpose of the Draft, its scope and components, and its review and certification process.
- Section II-Executive Summary: This section includes a summary of the proposed project and alternatives to be addressed in the Draft EIR. A brief description of the areas of controversy and issues to be resolved, and overview of the Mitigation Monitoring and Reporting Program, in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this section.
- Section III-Project Description: This section includes a detailed description of the proposed project, including its location, site, and project characteristics. A discussion of the project objectives, intended uses of the Draft EIR, responsible agencies, and approvals that are needed for the proposed project are also provided.
- Section IV-Environmental Impact Analysis: This section analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are as follows:
  - Section IV.A-Impacts Found to be Less than Significant: This section contains analysis of the topical sections not addressed further in Section IV.
  - Section IV.B- Aesthetics: Addresses the potential visual impacts of development intensification and the overall increase in illumination produced by the project.
  - Section IV.C- Air Quality: Addresses the potential air quality impacts associated with project implementation, as well as consistency with the Butte County Air Quality Management District 2014 CEQA Air Quality Handbook.
  - Section IV.D- Biological Resources: Addresses the project's potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.
  - Section IV.E-Cultural Resources: Addresses potential impacts on historical resources, archaeological resources, paleontological resources, and burial sites.
  - Section IV.F-Geology and Soils: Addresses the potential impacts the project may have on soils and assesses the effects of project development in relation to geologic and seismic conditions.

- Section IV.G- Greenhouse Gas Emissions: Addresses the emissions of greenhouse gases related to the proposed project.
  - Section IV.H-Hazards and Hazardous Materials: Addresses the potential for the presence of hazardous materials or conditions on the project site and in the project area that may have the potential to impact human health.
  - Section IV.I- Hydrology and Water Quality: Addresses the potential impacts of the project on local hydrological conditions, including drainage areas, and changes in the flow rates.
  - Section IV.J-Land Use and Planning: Addresses the potential land use impacts associated with consistency with the Chico 2020 General Plan and the Chico Municipal Code.
  - Section IV.K-Noise: Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.
  - Section IV.L-Population and Housing: Addresses the potential impacts related to the potential increase in population and housing availability as a result of the proposed project.
  - Section IV.M-Public Services: Addresses the potential impacts associated with the project regarding demand for public services.
  - Section IV.N-Recreation: Addresses the potential impacts associated with the recreational facilities within the City of Chico.
  - Section IV.O-Transportation and Traffic: Addresses the impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.
  - IV.P-Utilities and Service Systems: Addresses the potential impacts associated with the project regarding utilities and service systems
  - IV.Q-Tribal Cultural Resources: Addresses the impacts on the local tribal cultural resources resulting from the proposed project.
- Section V-Cumulative Effects: This section discusses the cumulative impacts associated with the proposed project, including the impacts associated with the build-out of the 2030 Chico General Plan.
  - Section VI- General Impact Categories: This section provides a summary of significant and unavoidable impacts associated with the proposed project, a discussion of the potential growth inducement of the proposed project, and a discussion of potential significant irreversible environmental changes associated with the proposed project.

- Section VII-Alternatives to the Proposed Project: This section compares the impacts of the proposed project with two land-use project alternatives: Alternative A. No Project and Alternative B. Elimination of RS-20 lots. An environmentally superior alternative is identified. In addition, alternatives initially considered but rejected from further consideration are discussed.
- Section VIII- Preparers of the EIR and Persons Consulted: This section also contains a full list of persons and organizations that were consulted during the preparation of this Draft EIR. This section also contains a full list of the authors who assisted in the preparation of the Draft EIR, by name and affiliation.
- Section IX-References: This section contains a full list of references that were used in the preparation of this Draft EIR.
- Appendices: This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as all technical material prepared to support the analysis.

## **H. DOCUMENTS INCORPORATED BY REFERENCE**

As permitted by CEQA Guidelines Section 15150, this Draft EIR has referenced several technical studies, analyses, and previously certified environmental documentation. Information from the documents, which have been incorporated by reference, has been briefly summarized in the appropriate section(s). The relationship between the incorporated part of the referenced document and the Draft EIR has also been described. The documents and other sources that have been used in the preparation of this Draft EIR include but are not limited to:

- Chico 2030 General Plan
- Chico Municipal Code
- City of Chico Design Guidelines Manual
- California Water Service Company 2010 Urban Water Management Plan
- Butte County Air Quality Management District 2014 CEQA Air Quality Handbook
- Public Review Draft Butte County Habitat Conservation Plan/Natural Community Conservation Plan

These documents are specifically identified in Section IX. (References), of this Draft EIR. In accordance with CEQA Guidelines Section 15150(b), the General Plan, the Municipal Code, and the referenced documents and other sources used in the preparation of the Draft EIR are available for review at the City of Chico offices at the address shown in Section IX. (References).

## I. DOCUMENTS PREPARED FOR THE PROJECT

The following technical studies and analyses were prepared for the proposed project:

- Air Quality/ GHG CalEEMod Report, Prepared by Illingworth and Rodkin (Appendix C).
- Biological Resources Assessment, prepared by WRA Inc. (Appendix D).
- Wetland Delineation Report, prepared by WRA Inc. (Appendix D).
- Rare Plant Survey and Mapping, prepared by WRA Inc. (Appendix D).
- Cultural Resources Report, prepared by Far Western (Appendix E).
- Water Supply Assessment, prepared by Cal Water (Appendix F).
- Noise Analysis, prepared by Bollard Acoustical Consultants, Inc. (Appendix G).
- Transportation Assessment prepared by Fehr & Peers (Appendix H)

## J. REVIEW OF DRAFT EIR

Upon completion of the Draft EIR, the City of Chico filed a Notice of Completion (“NOC”) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, a Notice of Availability of this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Chico Community Development Department and the Butte County Library Chico Branch. The address for each location is provided below:

City of Chico  
Community Development Department  
411 Main Street, 2nd Floor  
Chico, CA 95927  
Hours: Monday–Friday: 8 a.m. to 5 p.m.

Butte County Library, Chico Branch  
1108 Sherman Avenue Chico, CA 95926  
Hours: Tuesday: 10 a.m. to 7 p.m.  
Wednesday and Thursday: 11 a.m. to 7 p.m.  
Friday: 10 a.m. to 5 p.m.  
Saturday: 9 a.m. to 5 p.m.  
Sunday: 1 p.m. to 5 p.m.

The Draft EIR is also available electronically on the City of Chico’s website:  
[http://www.chico.ca.us/planning\\_services/Stonegate\\_000.asp](http://www.chico.ca.us/planning_services/Stonegate_000.asp)

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Mr. Mike Sawley, Senior Planner  
City of Chico  
Community Development Department  
411 Main Street, 2nd Floor  
P.O. Box 3420  
Chico, CA 95927  
Phone: 530.879.6800  
Fax: 530.895.4726  
Email: [mike.sawley@chicoca.gov](mailto:mike.sawley@chicoca.gov)

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the Chico Planning Commission on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.



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## **II. EXECUTIVE SUMMARY**

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### **A. INTRODUCTION**

This executive summary provides a brief description of the proposed project, areas of known controversy, and unresolved issues. The executive summary also identifies which environmental impacts associated the proposed project are significant, what specific mitigation measures have been identified to reduce or avoid each significant impact, and the level of significance of the impact after mitigation. This executive summary is intended as an overview and should be used in conjunction with a thorough reading of the Draft EIR and the Initial Study, which is included in Appendix A of this Draft EIR. The text of this Draft EIR, including figures, tables, and appendices serve as the basis for this executive summary.

### **B. SUMMARY OF PROPOSED PROJECT**

#### **Project Location**

The project site is located in the southeast quadrant of the City of Chico in Butte County, California and is comprised of four parcels totaling approximately 313 acres. The project site is located along the east and west side of Bruce Road, between E. 20<sup>th</sup> Street and the Skyway at Assessor Parcel Numbers (APNs) 002-190-041, 018-510-007, 008, and 009. The project site is located adjacent to urban uses on its north side (single and multi-family residential), on its west side (single-family), and on the south (commercial). To the east is private grazing land and open space in Butte County jurisdiction (located in the City's proposed sphere of influence), sloping gently up in elevation to rolling foothill terrain.

#### **Project Description**

The project proposes to subdivide the project site into a combination of open space, public right-of-way, park, single-family residential standard lots, single-family residential half-acre lots, multi-family residential, and commercial uses (proposed project). The proposed project consists of the Stonegate Subdivision Vesting Tentative Subdivision Map, and related permits and approvals necessary for implementation of the proposed subdivision. The proposed project includes zone changes and General Plan Amendments to establish Primary Open Space in APN 018-510-008 and 018-510-009 and to reconfigure the Residential and Commercial designations throughout the site. Section III. (Project Description) provides a complete description of the project.

**Project Objectives**

The objectives of the proposed project are:

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Enhance public access to and protect the integrity of the Butte Creek Diversion Channel and adjacent habitats;
- Create residential neighborhoods in the project that offer a variety of housing types at various densities and price points to help meet the City's housing needs;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide commercial centers near major intersections to serve the surrounding residential neighborhoods and greater community; and
- Provide revenue to local businesses during project construction and operation.

## C. SUMMARY OF PROJECT ALTERNATIVES

Below is a summary of the alternatives to the proposed project considered in Section VII. (Alternatives) of the DEIR.

### **Alternative A. No Project Alternative**

Under the No Project Alternative, the existing site would remain unchanged and no new development would occur on the project site.

### **Alternative B. Elimination of RS-20 Lots Alternative**

Under Alternative B (ELMINIATION OF RS-20 LOTS), the proposed project would eliminate the proposed RS-20 lots in the southeast portion of the project site, Figure VII.Alt-1. In addition, the Alternative B would eliminate all associated infrastructure associated with these lots. The area previously associated with the RS-20 lots would be added to the open space preserve that is to be setup as part of the project. All other portions of the project would remain the same as the proposed project. This alternative would require the same discretionary approvals as the project.

Under Alternative B, approximately 13 acres of the 20-acre commercial lot (Lot 471) would be shifted to Low Density Residential (R1) development. The approximately 7-acre commercial lot would still be situated at the intersection of Bruce Road and East 20<sup>th</sup> Street, and the remaining 13 acres (nearest Parkhurst Street and Laredo Way) would be platted out with R1 lots appropriate for single-family residential development. Based on an average gross density of 5 units per acre, the additional 13 acres of R1-zoned property would correspond to approximately 65 homes.

### **Alternative C. Existing Land Use Designations Alternative**

Under Alternative C, the proposed project would not include amendments to the General Plan and Zoning land use designations. The project would be developed under the current General Plan and Zoning land use designations. Under Alternative C, the project would not include any community commercial, as it is not permitted under the existing land use designations. This alternative would retain the open space zoning that conforms to the Butte Creek Diversion Channel corridor (approximately 6 acres), but would not establish a large open space preserve as would the proposed proposed project. Development under Alternative C instead would include more low density residential throughout the project site. Higher-density multifamily would be shifted from the northern portions of the project site along Bruce Road to the southern border adjacent to Skyway. A limited amount of office residential would be permitted at the corners of Bruce Road and East 20<sup>th</sup> Street. Half-acre suburban residential (RS-20) lots would be developed on the entire area east of the Diversion Channel.

## D. AREAS OF KNOWN CONTROVERSY/ISSUES TO BE RESOLVED

Section 15123 of the CEQA Guidelines requires an EIR to identify areas of controversy known to the lead agency, including issues raised by agencies and the public, and issues to be resolved. Environmental concerns raised in letters submitted to the City of Chico in response to the Notice of Preparation (NOP) and comments raised at the EIR scoping meeting included in Appendix B.

- Lead Agencies/Responsible Agencies
- Project Description
- Approvals and Permits Required
- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geological Resources
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Cumulative Impacts
- Alternatives
- Other

### Disagreement Among Experts

This Draft EIR contains substantial evidence to support all the conclusions presented herein. It is possible that there will be disagreement among various parties regarding these conclusions, although the City of Chico is not aware of any disputed conclusions at the time of this writing. Both the CEQA Guidelines and case law clearly provide the standards for treating disagreement among experts. Where evidence and opinions conflict on an issue concerning the environment, and the lead agency knows of these controversies in advance, the EIR must acknowledge the controversies, summarize the conflicting opinions of the experts, and include sufficient information to allow the public and decision makers to make an informed judgment about the environmental consequences of the proposed project.

## Potentially Controversial Issues

Below is a list of potentially controversial issues that may be raised during the public review and hearing process of this Draft EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems
- Tribal Cultural Resources

It is also possible that evidence will be presented during the 45-day, statutory Draft EIR public review period that may create disagreement. Decision makers would consider this evidence during the public hearing process. In rendering a decision on a project where there is disagreement among experts, the decision makers are not obligated to select the most environmentally preferable viewpoint. Decision makers are vested with the ability to choose whatever viewpoint is preferable and need not resolve a dispute among experts. In their proceedings, decision makers must consider comments received concerning the adequacy of the Draft EIR and address any objections raised in these comments. However, decision makers are not obligated to follow any directives, recommendations, or suggestions presented in comments on the Draft EIR, and can certify the Final EIR without needing to resolve disagreements among experts.

## E. PUBLIC REVIEW DRAFT EIR

Upon completion of the Draft EIR, the City of Chico filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, a Notice of Availability of this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of Chico offices and the Butte County Library, Chico Branch. The address for each location is provided below:

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Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Mr. Mike Sawley, Senior Planner  
City of Chico  
Community Development Department  
411 Main Street, 2nd Floor  
P.O. Box 3420  
Chico, CA 95927  
Phone: 530.879.6800  
Fax: 530.895.4726  
Email: [mike.sawley@chicoca.gov](mailto:mike.sawley@chicoca.gov)

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the Chico Planning Commission on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

## **D. SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Table II-1 summarizes the various significant environmental impacts associated with the proposed project that are analyzed in detail in the Draft EIR. Table II-1 also includes the mitigation measures recommended to reduce or avoid the significant environmental impacts, and identifies the level of impact significance after mitigation. Refer to the Initial Study in Appendix A to the Draft EIR for additional environmental impacts and mitigation measures that were not analyzed in detail in the EIR. Table II-1 is included in the EIR as required by CEQA Guidelines Section 15123(b)(1).

**Table II-1  
Summary of Significant Environmental Impacts and Mitigation Measures**

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
<b>AIR QUALITY</b>		
<p>Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?</p>	<p><i>Mitigation Measure AIR-2A:</i></p> <p><i>Include basic measures to control dust and exhaust during construction.</i></p> <p>During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. The contractor shall implement the following best management practices:</p> <ol style="list-style-type: none"> <li>1. Reduce the amount of the disturbed area where possible;</li> <li>2. 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;</li> <li>3. All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used;</li> <li>4. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following</li> </ol>	<p align="center"><b>Less-than-Significant</b></p>



Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>completion of any soil disturbing activities;</p> <ol style="list-style-type: none"> <li>5. 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;</li> <li>6. All disturbed soil areas non-subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District;</li> <li>7. 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;</li> <li>8. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;</li> <li>9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of fretboard (minimum vertical distances between top of load and top of trailer) in accordance with local regulations;</li> <li>10. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;</li> <li>11. Sweep streets at the end of each day if visible soil</li> </ol>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible; and</p> <p>12. 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.</p> <p><i>Mitigation Measure AIR-2B:</i></p> <ol style="list-style-type: none"> <li>1. All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days or 20 hours shall meet, at a minimum, U.S. EPA NO<sub>x</sub> emissions standards for Tier 4 engines or equivalent.</li> <li>2. The project sponsor shall require all architectural coatings during construction containing 50 g/L or less.</li> </ol> <p><i>Mitigation Measure AIR-2C/GHG-1: The project applicant shall implement the following BCAQMD-recommended operational mitigation measures:</i></p> <ol style="list-style-type: none"> <li>1. Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools;</li> <li>2. Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles;</li> <li>3. Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available</li> </ol>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>locally if possible;</p> <ol style="list-style-type: none"> <li>4. Final designs shall consider buildings that include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design);</li> <li>5. Utilize high efficiency gas or solar water heaters;</li> <li>6. Utilize built-in energy efficient appliances (i.e., Energy Star);</li> <li>7. Utilize double-paned windows;</li> <li>8. Utilize low energy street lights (i.e. light-emitting diode);</li> <li>9. Utilize energy-efficient interior lighting;</li> <li>10. Utilize low-energy traffic signals (i.e., light-emitting diode);</li> <li>11. The project shall meet all title 24 requirements, including but not limited to;               <ol style="list-style-type: none"> <li>a. Install door sweeps and weather stripping (if more efficient doors and windows are not available);</li> <li>b. Install energy-reducing programmable thermostats;</li> </ol> </li> </ol> <p>Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs;</p> <p>; and</p>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>12. Prior to the recordation of each Final Map, to the extent that cumulative project operational emissions exceed applicable thresholds the project applicant shall participate in an Off-site Mitigation Program coordinated through the Butte County Air Quality Management District (BCAQMD). The project applicant shall utilize a methodology based on the BCAQMD CEQA Handbook with final details to be approved by the BCAQMD and City for calculating the payment to the Off-site Mitigation Program.</p>	
Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	See Mitigation Measures AIR-2A, AIR-2B and AIR-2C/GHG-1:	<b>Less-than-Significant</b>
Expose sensitive receptors to substantial pollutant concentrations?	<p>See Mitigation Measures AIR-2A</p> <p>Mitigation Measure AIR-4: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.</p> <p>1. All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days or 20 hours shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent. The construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>thresholds. The use of equipment that includes CARB-certified Level 3 Diesel Particulate Filters<sup>1</sup> or alternatively-fueled equipment (i.e., non-diesel) could meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant;</p> <p>2. Implementing a design measure to minimize emissions from on- and off-road equipment associated with the construction phase. This measure should include but not be limited to the following elements:</p> <ul style="list-style-type: none"> <li>a. Tabulation of on- and off-road construction equipment (type, age, horse-power, engine model year and miles and/or hours of operation);</li> <li>b. Schedule equipment to minimize the amount of large construction equipment operating simultaneously during any given time period;</li> <li>c. Locate staging areas at least 1,000 feet away from sensitive receptors;</li> <li>d. Where feasible, limit the amount of cut and fill to 2,000 cubic yards per day;</li> </ul>	

<sup>1</sup> See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>e. Where feasible, limit the length of the construction work-day period; and</p> <p>f. Where feasible, phase construction activities;</p> <p>3. Schedule construction truck trips during non-peak hours to reduce peak hour emissions;</p> <p>4. Proposed truck routes should be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors in a truck route map; and</p> <p>5. Trucks and vehicles should be kept with the engine off when not in use, to reduce vehicle emissions. Signs shall be placed in queuing areas to remind drivers to limit idling to no longer than 5 minutes.</p>	
<b>BIOLOGICAL RESOURCES</b>		
Impacts to Special-Status and Nesting Bird Species	<p><i>Mitigation Measure BIO-1A:</i></p> <p>Prior to the issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to nesting birds, including white-tailed kite, grasshopper sparrow, oak titmouse, loggerhead shrike, yellow-billed magpie, Nuttall's woodpecker, and other nesting bird species protected by the MBTA and CFGC.</p> <ul style="list-style-type: none"> <li>If ground disturbance or vegetation removal is initiated in the non-breeding season (August 16 through January 31), no pre-construction surveys for nesting birds are required and no adverse impact to nesting birds would result.</li> </ul>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<ul style="list-style-type: none"> <li>• If ground disturbance or removal of vegetation is initiated during the breeding bird season (February 1 through August 15), pre-construction surveys shall be performed by a qualified biologist no more than 14 days prior to commencement of ground disturbing activities to determine the presence and location of nesting bird species within and adjacent to the proposed project footprint. The results of the survey shall be compiled into a report and submitted to the City for review and approval prior implementation of the following measures if nesting birds are present:</li> <li>• If active nests are present, temporary no-work buffers shall be placed around active nests to prevent adverse impacts to nesting birds. Appropriate buffer distance shall be determined by a qualified biologist and is dependent on species and subsequent foraging requirements, legal status of species, surrounding vegetation, and topography. Typical buffer distances vary from 25 feet for common passerines to 500 feet for larger raptors and/or CDFW fully protected species. Work may continue within the buffer area once an active nest becomes inactive due to natural causes (i.e. young fledging the nest, the nest being otherwise depredated, etc.) and no adverse impact to birds would result from the proposed project.</li> </ul>	
Impacts to Pallid Bat	<p><i>Mitigation Measure BIO-1B:</i></p> <p>Prior to the issuance of a grading permit associated with the RS-20 lots east of the Diversion Channel, the Applicant shall implement the</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>following measures to reduce impacts to pallid bat:</p> <ul style="list-style-type: none"> <li>• Pre-construction roost assessment survey: A qualified biologist shall conduct a roost assessment survey of trees located within the project site. The survey shall assess use of the trees and cavities for roosting as well as potential presence of bats. If the biologist finds no evidence of bat roosting, no further measures are recommended. The results of the survey shall be compiled into a report and submitted to the City for review and approval prior implementation of the following measures if evidence of bat roosting is present:</li> <li>• Work activities outside the maternity roosting season: If evidence of bat roosting is discovered during the pre-construction roost assessment and construction activities are planned August 1 through February 28 (outside the bat maternity roosting season), a qualified biologist shall implement passive exclusion measures to prevent bats from re-entering the tree cavities. After sufficient time to allow bats to escape and a follow-up survey to determine that bats have vacated the roost, construction activities may continue and impacts to special-status bat species would be avoided.</li> <li>• Work activities during the maternity roosting season: If a pre-construction roost assessment discovers evidence of bat roosting in the trees during the maternity roosting season (March 1 through July 31), and determines maternity roosting bats are present, a no disturbance shall be established</li> </ul>	



Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>around these roost sites until they are determined to be no longer active by the qualified biologist. The size of the no distance buffer shall be determined by the qualified bat biologist in coordination with CDFW and would depend on existing screening around the roost site (such as dense vegetation), the roost type, species present, as well as the type of construction activity which would occur around the roost site.</p>	
Impacts to Western Spadefoot	<p><i>Mitigation Measure BIO-1C:</i></p> <p>Prior to issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to western spadefoot:</p> <ul style="list-style-type: none"> <li>• Prior to initial ground disturbance, a pre-construction presence/absence survey shall be conducted by a qualified biologist using appropriate site-specific methodology (e.g., visual surveys for adult spadefoots during or immediately following the first heavy rains of the fall/winter period). A qualified biologist may also survey aquatic habitat for breeding adults, eggs, and/or larvae. If western spadefoot is not present, impacts to this species would be avoided. The results of the survey shall be compiled into a report and submitted to the City for review and approval prior implementation of the following measures if western spadefoot is present:</li> <li>• If western spadefoots individuals are found within or adjacent to the Study Area, the Applicant shall retain a qualified biologist to consult with CDFW to determine appropriate</li> </ul>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>mitigation for impacts to western spadefoot habitat and individuals.</p> <ul style="list-style-type: none"> <li>• In addition to consultation with CDFW, construction activities shall take place during the dry season (generally June 1 through September 30) within two kilometers of aquatic habitats. If construction activities extend into the wet season (generally October 1 through May 31), temporary exclusion fencing shall be installed 100 feet from work areas to prevent western spadefoot from entering construction areas. In addition, the following BMPs shall be implemented during construction: <ul style="list-style-type: none"> <li>○ Escape ramps shall be installed in all trenches or excavations to allow western spadefoot to escape.</li> <li>○ Biological monitoring shall be provided by an agency-approved biologist during construction in all areas within two kilometers of aquatic habitats. The biological monitor shall identify, capture, and relocate western spadefoot present in the work area to a pre-approved location, if necessary.</li> <li>○ Water quality of western spadefoot habitat shall be maintained through implementation of appropriate erosion-control measures to reduce siltation and contaminated runoff from the project by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.</li> </ul> </li> </ul>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<ul style="list-style-type: none"> <li>In addition, the proposed project shall be required to mitigate for impacts to 9.35 acres (Direct impacts) and 4.51 acres (Indirect Impacts) of aquatic resources that shall result in the creation, preservation, restoration, or purchase of mitigation bank credits for wetlands (see <i>Mitigation Measure BIO-4</i> below).</li> </ul>	
Special-Status Vernal Pool Crustaceans	<p><i>Mitigation Measure BIO-1D:</i></p> <p>Prior to issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to special-status vernal pool crustaceans:</p> <ul style="list-style-type: none"> <li>Unless a protocol-level presence/absence survey prepared by a qualified biologist demonstrates a lesser amount of occupied habitat within the development area, it shall be assumed that the project will result in the loss of 9.35 acres of occupied special-status vernal pool crustacean habitat.</li> </ul> <p>If VPFS and/or VPTS are either presumed present or determined by surveys to be present, and avoidance is not feasible, then impacts to their habitat shall be mitigated at a 2:1 ratio (two acres mitigated for every one acre lost) through preservation, restoration, and/or creation of suitable vernal pool crustacean habitat or purchase of vernal pool mitigation bank credits. However, final habitat acreages, mitigation ratios and other project-specific compensatory requirements shall be determined through consultation between USFWS and the Corps as part of the Section 404 permitting process.</p>	Less-than-Significant

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
Impacts to Valley Elderberry Longhorn Beetle	<p><i>Mitigation Measure BIO-1E:</i></p> <p>Prior to the issuance of improvement plans or grading permits for the extension of utilities from Street A to serve the RS-20 lots located east of the Diversion Channel, the Applicant shall implement the following to avoid impacts to VELB (adapted from USFWS 2017):</p> <ul style="list-style-type: none"> <li>• <u>Avoidance and Minimization:</u> To the extent feasible, project activities within 165 feet of elderberry shrubs shall be avoided. For all activities that occur within 165 feet of elderberry shrubs, the following measures shall be implemented to ensure that avoidance activities completely avoid impacting elderberry shrub habitat for VELB: <ul style="list-style-type: none"> <li>○ <u>Fencing:</u> All areas to be avoided during project activities shall be fenced and/or flagged near project activity limits.</li> <li>○ <u>Avoidance area:</u> Trenching, paving, or similar activities that may damage or kill elderberry shrubs shall have an avoidance area of at least 20 feet from the drip-line of the shrub.</li> <li>○ <u>Worker education:</u> 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 non-compliance.</li> <li>○ <u>Construction monitoring:</u> A qualified biologist shall monitor the project at appropriate intervals to ensure all avoidance and minimization measures are implemented.</li> </ul> </li> </ul>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<ul style="list-style-type: none"> <li>○ <u>Timing</u>: As feasible, all activities that would occur within 165 feet of an elderberry shrub shall be conducted outside of VELB flight season (March - July).</li> <li>○ <u>Trimming</u>: Trimming of elderberry shrubs shall occur between November and February and shall avoid removing any branches or stems that are <math>\geq 1</math> inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established in consultation with the Service.</li> <li>○ <u>Chemical Usage</u>: Herbicides shall not be used within the drip-line of an elderberry shrub. Insecticides shall not be used within 98 feet of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method.</li> <li>○ <u>Mowing</u>: Mechanical weed removal within the drip-line of an elderberry shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry shrub.</li> <li>• <u>Transplanting</u>: Where elderberry shrubs cannot be avoided or indirect impacts nearby will result in the death of stems or entire shrubs, the Applicant shall transplant all elderberry shrubs with stems greater than 1 inch in diameter, where feasible, to protect VELB larvae. In addition, the Applicant shall use the following guidelines when transplanting elderberry shrubs to a USFWS-approved location: <ul style="list-style-type: none"> <li>○ <u>Monitor</u>: A qualified biologist shall be on-site for the duration of transplanting activities to ensure compliance with</li> </ul> </li> </ul>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>avoidance and minimization measures, in addition to other conservation measures.</p> <ul style="list-style-type: none"> <li>○ <u>Exit holes:</u> Exit-hole surveys shall be completed immediately before transplanting. Details of the survey including number of exit holes observed, the GPS location of the plant to be transplanted, and the GPS location of the final position of the transplanted shrub shall be recorded and reported to the Service and to CNDDDB.</li> <li>○ <u>Timing:</u> Elderberry shrubs shall be transplanted while shrubs are dormant (from November through the first two weeks in February) and after shrubs have lost their leaves to reduce shock to the shrub and increase transplantation success.</li> <li>○ <u>Transplanting Procedure:</u> Transplanting shall follow the most current version of ANSI A300 (Part 6) guidelines for transplanting.</li> <li>○ <u>Trimming Procedure:</u> Any trimming of elderberry shrubs shall occur between November and February and should minimize removal of branches and/or stems that exceed one (1) inch in diameter.</li> </ul>	
Impacts to Butte County Meadowfoam and Shield-bracted Monkeyflower	<p><i>Mitigation Measure BIO-2A:</i></p> <p>Prior to the issuance of a grading permit, the Applicant shall consult with both the USFWS and the CDFW to obtain authorization for project implementation and develop appropriate type and amount of compensatory mitigation for project impacts to Butte County meadowfoam (BCM) occupied habitat.</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>To compensate for project impacts to occupied BCM habitat the Applicant shall:</p> <p>(1) Preserve and enhance BCM habitat within the on-site preserve areas pursuant to a habitat mitigation and monitoring plan approved by the USFWS and the CDFW at a minimum 1:1 ratio for temporary impacts (1.0 acres enhanced over pre-project conditions for every one acre of temporarily impacted habitat). Enhancement activities will be detailed in the habitat mitigation and monitoring plan and will include vegetation management for non-native, annual grasses. In addition, in areas not previously documented to support BCM, but which consist of the same mapped soils association, BCM habitat will be created through a site-specific restoration plan to mitigate at a 1.5:1 ratio for permanent impacts (1.5 acres created over pre-project conditions for every one acre of permanently impacted habitat). Because successful creation of the microhabitat required by BCM cannot be guaranteed, a performance bond shall be established prior to restoration activities taking place, to purchase BCM credits at an approved mitigation bank at ratios outlined in (2). Creation of BCM habitat will consist of scraping topsoil to mimic the soil depth suitable for BCM (~4-6 inch depth of soil over bedrock) adjacent to swale habitat. Topsoil from known locations of BCM in the impact area will be salvaged and transplanted to these created areas and observed for three years. Performance will be met only when density of BCM in created habitat matches reference population density in preserved habitat. The success of the on-site preserve for BCM</p>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>habitat (enhancement and creation) shall be documented with before-and-after protocol-level, floristic, rare plant surveys that compare pre-project baseline BCM acreage and stem counts to post-restoration BCM acreage and stem counts. The plan shall detail methods, locations, and goals for re-locating soils from impacted areas to the preserve, and include contingency measures that address the potential that creation efforts could fall short of stated goals (including a performance bond posted by the Applicant during the restoration period matching the funding required to purchase credits at a 19:1 ratio); or,</p> <p>(2) Preserve habitat for BCM at a 19:1 ratio (19 acres of preservation for every one acre impacted) for direct impacts and at a 5:1 ratio (five acres of preservation for every one acre impacted) for indirect impacts. However, final habitat acreages, mitigation ratios, and other project-specific compensatory requirements for direct and indirect impacts shall be finalized during consultation between USFWS and the Corps as part of the Section 404 permitting process. This compensatory mitigation may include one or a combination of the following options:</p> <ul style="list-style-type: none"> <li>• Purchase BCM credits from an approved mitigation bank within the service area. The actual fee paid shall be that in effect at the time of payment.</li> <li>• Preserve and enhance BCM habitat at an existing site where long-term protections encumbering the property are currently not in place. This would likely include</li> </ul>	



Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>habitat within the 108 acre on-site open space preserve as well as the adjacent 14.76 acre Doe Mill-Schmidbauer Preserve (APN 018-510-002), which was dedicated to the City by the owner of the Stonegate project in 1989 in anticipation of mitigation requirements for a previous project that did not move forward at that time. This option would require the preparation of a long-term management plan, subject to approval by USFWS and the City, prior to the start of construction, along with an endowment for the long-term management of the property and a USFWS-approved conservation easement to ensure that the population of BCM is protected in perpetuity.</p> <p>Final habitat acreages, mitigation ratios, and other project-specific compensatory requirements shall be determined through consultation between USFWS and the Corps as part of the Section 404 permitting process. The exact cost to purchase preservation credits for project-related impacts shall be determined at the time of purchase. Mitigation credits shall be purchased and/or a conservation area and management plan shall be established prior to any grading or other ground-disturbing activities on the project site. Consultation shall also include requesting a consistency determination from CDFW concerning Butte County meadowfoam.</p>	
Invasive Weeds from Project Development	<p><i>Mitigation Measure BIO-2B:</i></p> <p>Prior to the issuance of a grading permit, the Applicant shall prepare</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>a Weed Control Plan for review and approval by the City. Prior to the start of construction activities, the Applicant shall implement a comprehensive, adaptive Weed Control Plan for pre-construction and construction invasive weed abatement. The long-term Weed Control Plan, shall include, but is not limited to, the following:</p> <ul style="list-style-type: none"> <li>• A pre-construction weed inventory shall be conducted by surveying all areas subject to ground-disturbing activity, including but not limited, to staging areas, access roads, and areas subject to grading.</li> <li>• Weed populations that (1) are rated High or Moderate for negative ecological impact in the California Invasive Plant Database (Cal-IPC) and (2) aid and promote the spread of wildfires (such as cheatgrass, Saharan mustard, and medusa head) shall be mapped and described according to density and area covered.</li> <li>• In areas subject to ground disturbance, weed infestations shall be treated prior to construction according to control methods and practices for invasive weed populations.</li> <li>• The Weed Control Plan shall be updated and utilized for eradication and monitoring post-construction.</li> <li>• Weed control treatments shall include all legally permitted herbicide, manual, and mechanical methods. The application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor and implemented by a Licensed</li> </ul>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>Qualified Applicator.</p> <ul style="list-style-type: none"> <li>• The timing of weed control treatment shall be determined for each plant species in consultation with USFWS with the goal of controlling populations before they start producing seeds.</li> <li>• Surveying and monitoring of the identified and treated populations shall be required at all sites impacted by construction and shall occur annually for years one to five and bi-annually for years six to ten.</li> <li>• During project preconstruction and construction, vehicles and all equipment shall be washed (including wheels, undercarriages, and bumpers) prior to commencing work in off road areas.</li> </ul>	
Disturbance to Riparian Habitat	<p><i>Mitigation Measure BIO-3A:</i></p> <p>Prior to issuance of a grading permit for the RS-20 lots located east of the Diversion Channel, the Applicant shall implement the following measures to reduce impacts to riparian habitat:</p> <p>The Applicant shall restore riparian habitat at a minimum ratio of 1:1 for temporary loss and 3:1 for permanent loss. For the current anticipated temporary loss of riparian habitat, the restoration amount shall be 0.02 acre. Restoration shall occur within the temporarily disturbed area in order to return the temporary impact area to pre-construction conditions. In addition, silt fencing or other appropriate erosion control BMPs shall be installed down grade of construction activities to minimize the transport of sediments. Other water quality</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>protection measures shall be implemented to reduce impacts to riparian habitat including:</p> <ul style="list-style-type: none"> <li>• Prior to construction, the contractor shall be required to prepare an Accidental Spill Prevention and Cleanup Plan. This plan shall include required spill control absorbent material, for use beneath stationary equipment, to be present on-site and available at all times.</li> <li>• To minimize fluid leaks during operation, refueling, and maintenance of stationary equipment spill control absorbent material shall be in place underneath this equipment at all times to capture potential leaks.</li> <li>• All stockpiling of construction materials, equipment, and supplies, including storage of chemicals, refueling and maintenance, shall occur outside the Butte Creek diversion channel. No equipment shall be washed where runoff could enter the channel.</li> <li>• All refueling and maintenance of equipment, other than stationary equipment, shall occur outside the channel's top-of-bank. Receptacles containing fuel, oil, or any other substance that may adversely affect aquatic resources shall be stored outside of the channel. Any hazardous chemical spills shall be cleaned immediately.</li> </ul> <p>Additionally, the Applicant shall implement MM-BIO 4 below to reduce impacts to wetlands and waters and riparian habitats.</p>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
Disturbance to Other Sensitive Natural Communities	<i>See Mitigation Measure BIO-3A and MM-BIO-4</i>	<b>Less-than-Significant</b>
Have a Substantial Adverse Effect on Federally Protected Wetlands and Waters	<p><i>Mitigation Measure BIO-4:</i></p> <p>Prior to issuance of any City permits for construction, grading, or other site-disturbing activities, the Applicant shall provide proof to the Chico Community Development Department that all necessary authorizations from the USACE and RWQCB for the discharge of dredged or fill material into the waters of the U.S. identified on the project site have been obtained.</p> <p>Prior to any work affecting the bed or bank of the Butte Creek Diversion Channel, tributaries, or associated riparian areas, the Applicant shall obtain a Lake or Streambed Alteration (LSA) Agreement from the CFW, as required under Section 1602 of the Fish and Game Code. The LSA Agreement shall detail the authorized activities affecting the Butte Creek Diversion Channel, tributaries, and associated riparian areas, and provide specific terms and conditions necessary to protect fish and wildlife resources in the project site. The Applicant shall comply with all requirements of the LSA agreement, including any compensatory mitigation such as replacement of impacted trees. A copy of the fully executed LSA Agreement shall be submitted to the Chico Community Development Department prior to initiation of any work impacting riparian habitats on the project site.</p> <p>To mitigate for the permanent loss of 9.35 acres and temporal impact to 4.51 acres of aquatic resources resulting from the project, the Applicant shall provide a USACE-approved compensatory</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	mitigation plan for impacts to waters of the U.S. The plan shall provide for replacement of waters of the U.S. at a 3:1 ratio (three acres replaced for every one acre removed), or as required by the USACE. The plan shall describe the specific methods for replacement of impacted waters on site, and provide a monitoring plan, including a reporting schedule and success criteria over a specific amount of time. In the event the USACE determines that compensatory mitigation for impacts to waters of the U.S. cannot be fully accomplished on site, the Applicant may purchase credits at a USACE-approved mitigation bank whose service area includes the project site. The type and amount of credits shall be determined in coordination with the USACE. Proof of the purchase of any required mitigation bank credits shall be provided to the Chico Community Development Department prior to initiation of any work impacting waters of the U.S. on the project site.	
Disturbance of Movement, Migration Corridors, and Nursery Sites	<i>See Mitigation Measure BIO-4</i>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
<b>CULTURAL RESOURCES</b>		
<p>Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?</p> <p>Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</p>	<p><i>Mitigation Measure CULT-2</i></p> <p>Prior to the start of grading operations for each phase of the project the Applicant shall provide reasonable notice and site access for a tribal representative to be present at the project site during any ground disturbing activities in areas mapped by the Mechoopda Indian Tribe of Chico Rancheria as High Sensitivity areas. If any archaeological or paleontological deposits are encountered, all soil-disturbing work shall be halted at the location of any discovery until a qualified archaeologist or paleontologist evaluates the significance of the find(s) and prepares a recommendation for further action. If the project site is expanded beyond its current limits, additional cultural resource studies shall be required.</p>	<b>Less-than-Significant</b>
<b>GREENHOUSE GAS EMISSIONS</b>		
<p>Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact (1,100 metric tons of CO<sub>2</sub>e per year and at least 4.6 metric tons of CO<sub>2</sub>e per service population) on the environment?</p>	<p><i>Mitigation Measure AIR-2C/GHG-1</i></p> <p>The project applicant shall implement the following BCAQMD-recommended operational mitigation measures:</p> <ol style="list-style-type: none"> <li>1. Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools;</li> <li>2. Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles;</li> <li>3. Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available</li> </ol>	<b>Significant and Unavoidable</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>locally if possible;</p> <ol style="list-style-type: none"> <li>4. Final designs shall consider buildings that include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design);</li> <li>5. Utilize high efficiency gas or solar water heaters;</li> <li>6. Utilize built-in energy efficient appliances (i.e., Energy Star);</li> <li>7. Utilize double-paned windows;</li> <li>8. Utilize low energy street lights (i.e. light-emitting diode);</li> <li>9. Utilize energy-efficient interior lighting;</li> <li>10. Utilize low-energy traffic signals (i.e., light-emitting diode);</li> <li>11. The project shall meet all title 24 requirements, including but not limited to:               <ol style="list-style-type: none"> <li>a. Install door sweeps and weather stripping (if more efficient doors and windows are not available);</li> <li>b. Install energy-reducing programmable thermostats;</li> <li>c. Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs.</li> </ol> </li> <li>12. Prior to the recordation of each Final Map, to the extent that cumulative project operational emissions exceed applicable thresholds the project applicant shall</li> </ol>	



Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	participate in an Off-site Mitigation Program coordinated through the Butte County Air Quality Management District (BCAQMD). The project applicant shall utilize a methodology based on the BCAQMD CEQA Handbook with final details to be approved by the BCAQMD and City for calculating the payment to the Off-site Mitigation Program.	
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<i>See Mitigation Measure AIR-2C/GHG-1</i>	<b>Significant and Unavoidable</b>
<b>HYDROLOGY AND WATER QUALITY</b>		
Substantial Erosion or Siltation through Alteration of Drainage Patterns	<p><i>Mitigation Measure HYDRO-1</i></p> <p>Prior to development of the RS-20 lots, the project applicant shall prepare a detailed hydraulic evaluation to determine the potential for improvements within the existing Federal Emergency Management Agency (FEMA) 100-year flood zones and California Department of Water Resources (DWR) 200-year flood zones to result in changes to the extent, depth, and velocity of flood flows. The modeling shall be performed and certified by a professional engineer using the U.S. Army Corp of Engineer's Hydrologic Engineering Center's River Analysis System (HEC-RAS) or similar surface water flow modeling software. The modeling shall include an evaluation of both the on-site and off-site flooding impacts under existing flooding conditions and future flood conditions as a result of developing the RS-20 lots.</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>Based on the surface water flow modeling, areas of development that could reduce the overflow storage capacity of floodwater near the channel shall be identified. For any of the RS-20 lots improvements that could reduce overflow storage capacity, the project design shall be modified to ensure there is no net decrease in the floodwater storage capacity. This could include balancing the amount of cut and fill materials within the flood zones.</p> <p>Based on the surface water flow modeling, areas of development that could affect the velocity of floodwater along the Butte Creek Diversion Channel shall be identified. For any improvements that would substantially alter the channel flow velocity, the project design for the RS-20 lots shall be modified to reduce potential erosion, siltation, and associated flooding impacts. Modifications to the project design may include, but are not limited to, the following measures.</p> <ul style="list-style-type: none"> <li>• Alter the location and design of structures and/or fill materials within the FEMA 100-year flood zones or DWR 200-year flood zones.</li> <li>• Install erosion controls systems such as rock protection or erosion resistant vegetation.</li> <li>• Increase the size of proposed culverts.</li> <li>• Install cross-flow culverts for improvements through flood zones.</li> <li>• Improve existing off-site stormwater drainage systems that would receive runoff from the project site.</li> </ul>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>The detailed hydraulic evaluation and, if necessary, proposed changes to the RS-20 lots design, shall be submitted to the City of Chico and any other regulatory agencies that have jurisdiction over the improvements.</p> <p><i>Mitigation Measure HYDRO-2</i></p> <p>The project applicant shall coordinate levee modification activities (if any) with the California Department of Water Resources and obtain an encroachment permit from the Central Valley Flood Protection Board (CVFPB) prior to commencing project construction activities. As required by the encroachment permit, project construction shall comply with the CVFPB's flood control standards described under Title 23 of the California Code of Regulations and (if applicable) the U.S. Army Corps of Engineers construction standards to ensure that the integrity of the existing flood-control system is properly maintained.</p>	
Increased Flooding through Alteration of Drainage Patterns or Substantial Increases in the Rate or Amount of Surface Runoff	<i>See Mitigation Measures HYDRO-1 &amp; HYDRO-2</i>	<b>Less-than-Significant</b>
Placing Structures within a 100-year Flood Hazard Area which would Impede or Redirect Flood Flows	<i>See Mitigation Measures HYDRO-1 &amp; HYDRO-2</i>	<b>Less-than-Significant</b>
Inundation as a Result of the Failure of a Levee or Dam	<i>See Mitigation Measures HYDRO-1 &amp; HYDRO-2</i>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
<b>NOISE</b>		
Commercial Parking Area Noise at Noise-Sensitive Uses	<p><i>Mitigation Measure NOISE-2</i></p> <p>To satisfy the City of Chico's noise level standards at noise-sensitive uses near commercial lots within the project, commercial parking areas within the project shall be designed such that no residentially-zoned property would have 100 or more parking spaces within 100 feet, unless a solid noise barrier of 6 feet in height is included at the interface of the commercial parking area and the residential property.</p>	<b>Less-than-Significant</b>
On-Site Commercial Loading Dock Noise at Noise-Sensitive Uses	<p><i>Mitigation Measure NOISE-4</i></p> <p>To satisfy the City of Chico's noise level standards at residentially-zoned properties nearest Lots 471, 472 and 474, the future commercial development on these commercial lots shall be designed to locate all loading docks a minimum distance of 125 feet from property lines abutting residentially-zoned properties. Alternatively, a future acoustic study prepared by a qualified professional and based on the specific commercial site design, may be used to demonstrate that a lesser separation would meet the City's noise level standards. Such future acoustic study shall state all assumptions, including specifications for a noise barrier as appropriate, and be subject to review and approval by the Chico Community Development Director.</p>	<b>Less-than-Significant</b>
Future Interior Traffic Noise Levels at Proposed Residences	<p><i>Mitigation Measure NOISE-7</i></p> <p>Should the building facades of the future multi-family residences be</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	proposed within 90 feet of the centerline of Bruce Road, all upper floor windows of the residential structures located within that setback distance and within line-of-sight of Bruce Road shall be upgraded to STC-32.	
<b>TRANSPORATION AND TRAFFIC</b>		
Impacts to Intersection Operations	<p><i>Mitigation Measure TRANSPORTATION-1</i></p> <p><i>Install a Traffic Signal at Bruce Road / Raley Boulevard (Intersection 13)</i></p> <p>The AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes at full project build-out would meet Signal Warrant 3 – Peak Hour Warrant for the AM and PM peak hours. With the implementation of a traffic signal the weekday AM peak hour level of service would improve from LOS F to LOS C, and the PM peak hour level of service would improve from LOS F to LOS D, which would result in a <b><i>less-than-significant</i></b> impact after mitigation.</p> <p>The applicant shall design, fund, and install a traffic signal when signal warrants are met. The City shall be responsible for monitoring traffic conditions at the intersection and notifying the applicant, in writing, when traffic signal installation is required. Following such notification from the City that the traffic signal is required, the signal shall be included on any subsequent subdivision improvement plans for the project, and no new building permits for</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>traffic-generating uses shall be issued on Lot 472 until the signal has been installed or progress toward installation is substantially underway. To the extent that the applicant qualifies for reimbursement for a portion of the costs associated with this improvement pursuant to provisions of the Chico Municipal Code, the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City.</p> <p><i>Mitigation Measure TRANSPORTATION-2</i></p> <p><i>Install a Traffic Signal at Skyway / Forest Avenue (Intersection 17)</i></p> <p>The PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes meet Signal Warrant 3 – Peak Hour Warrant for the PM peak hour. With the implementation of a traffic signal the weekday PM peak hour level of service would improve from LOS F to LOS A, which would result in a <b>less-than-significant</b> impact.</p> <p>The applicant shall design, fund, and install a traffic signal when signal warrants are met. The City shall be responsible for monitoring traffic conditions at the intersection and notifying the applicant, in writing, when traffic signal installation is required. Following such notification from the City that the traffic signal is required, the signal shall be included on any subsequent subdivision improvement plans for the project, and no new building permits for traffic-generating uses shall be issued on Lot 472 until the signal has been installed or progress toward installation is substantially</p>	

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	underway. To the extent that the applicant qualifies for reimbursement for the costs associated with this improvement pursuant to provisions of the Chico Municipal Code, the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City.	
Impacts to Bicycle Facilities	<p><i>Mitigation Measure TRANSPORTATION-3</i></p> <p><i>Add Bike Lanes or Path Along Skyway</i></p> <p>Subdivision improvement plans for the RS-20 lots located along Potter Road (Phases 11 and/or 12), shall include the provision of bike lanes or path connection along Skyway between Potter Road and existing facilities near Bruce Road. Since the existing Skyway bridge crossing over the Butte Creek Diversion Channel is too narrow to accommodate any additional bicycle or pedestrian facilities, a new bridge crossing will be needed to fulfill this mitigation. Any additional public right-of-way needed to accommodate this connection shall be dedicated by the developer. Final design details for the connection required by this mitigation shall be subject to review and approval by the Public Works Director.</p>	
Impacts to Pedestrian Facilities	<p><i>Mitigation Measure TRANSPORTATION-4</i></p> <p><i>Add Sidewalk or Path Along Skyway</i></p> <p>Subdivision improvement plans for the RS-20 lots located along Potter Road (Phases 11 and/or 12), shall include the provision of sidewalk or path connection along Skyway between Potter Road and facilities located near Bruce Road. Since the existing Skyway bridge crossing over the Butte Creek Diversion Channel is too narrow to</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<p>accommodate any additional bicycle or pedestrian facilities, a new bridge crossing will be needed to fulfill this mitigation. Any additional public right-of-way needed to accommodate this connection shall be dedicated by the developer. Final design details for the connection required by this mitigation shall be subject to review and approval by the Public Works Director.</p> <p>Implementation of this pedestrian facility would provide adequate pedestrian access for the RS-20 lots; therefore, this impact would be reduced to a <b>less-than-significant</b> level.</p>	
Impacts to Transit Facilities	<p><i>Mitigation Measure TRANSPORTATION-5</i></p> <p><i>Transit Stops and Routes</i></p> <p>Prior to City approval of each set of detailed subdivision improvement plans, the applicant shall coordinate with local public transit providers to determine a suitable transit service concept for the project site that does not substantially alter existing public transit operations and is consistent with relevant service standards and new service warrants. Potential transit service modifications include a new route or route extension along Bruce Road between E 20th Street and Skyway (consistent with the BCAG Transit and Non-Motorized Plan) and the installation of bus stops internal to the project site. Bus stops should be installed at locations within close proximity to key pedestrian routes (e.g. the Bruce Road / Webster Drive and Skyway / Potter Road intersections). Implementation of this mitigation measure would provide adequate access to transit service, therefore, this impact would be reduced to a <b>less-than-</b></p>	<b>Less-than-Significant</b>



Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	<b>significant</b> level.	
Impacts to Cumulative Intersection Operations	<p>See Mitigation Measures TRANSPORTATION-1 and TRANSPORTATION-2</p> <p>Mitigation Measure TRANSPORTATION-6:</p> <p>Install a Traffic Signal at Bruce Road / Raley Boulevard (Intersection 13)</p> <p>The AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes at full project build-out would meet Signal Warrant 3 – Peak Hour Warrant for the AM and PM peak hours. With the implementation of a traffic signal the weekday AM peak hour level of service would improve from LOS F to LOS C, and the PM peak hour level of service would improve from LOS F to LOS E, which would result in a <b>less-than-significant</b> impact after mitigation.</p> <p>Mitigation Measure TRANSPORTATION-7:</p> <p>Install a Traffic Signal at Skyway / Forest (Intersection 17)</p> <p>AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes meet Signal Warrant 3 – Peak Hour Warrant for both peak hours. With the implementation of a traffic signal the weekday AM and PM peak hour level of service would improve from LOS F to LOS B,</p>	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
	which would result in a <b><i>less-than-significant</i></b> impact after mitigation.	
Cumulative impacts from the project on bicycle facilities, pedestrian facilities and transit facilities	See Mitigation Measures TRANSPORTATION-3, TRANSPORTATION-4, TRANSPORTATION-5	<b>Less-than-Significant</b>
<b>UTILITIES AND SERVICE SYSTEM</b>		
Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	See Mitigation Measures HYDRO-1 & HYDRO-2	<b>Less-than-Significant</b>
<b>TRIBAL CULTURAL RESOURCES</b>		
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	See Mitigation Measures CULT-2	<b>Less-than-Significant</b>

Significant Environmental Impact	Mitigation Measures	Level of Impact After Mitigation
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.	<i>See Mitigation Measures CULT-2</i>	<b>Less-than-Significant</b>

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### III. PROJECT DESCRIPTION

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This section provides an overview of the project site's existing regional and local setting. Additional descriptions of the environmental setting as it relates to each of the environmental issues analyzed in Section IV (Environmental Impact Analysis) of this Draft EIR are included in the environmental setting discussions contained within Sections IV.B - IV.O. Also provided in this section is a list of related projects, which is used as the basis for the discussion of cumulative impacts in Section IV of the Draft EIR.

CEQA Guidelines Section 15125(a) states an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published, or if no NOP is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting would normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The NOP was prepared and circulated on June 20, 2016.

#### A. PROJECT LOCATION

##### Regional Setting

The project site is located in the southeast quadrant of the City of Chico in Butte County, California and is comprised of four parcels totaling approximately 313 acres (Figure 1). Chico is located along the northeastern edge of the Sacramento Valley, in Butte County. Chico lies approximately 90 miles north of Sacramento and 70 miles south of Redding. The project site is located approximately two miles east of State Highway 99 and one mile south of State Highway 32.

##### Local Setting

The project site is located along the east and west side of Bruce Road, between E. 20<sup>th</sup> Street and the Skyway at Assessor Parcel Numbers (APNs) 002-190-041, 018-510-007, 008, and 009. The site is located within portions of section 31 and 32, T22N, R2E of the USGS 7.5-minute Chico Quadrangle. The project site is generally level undeveloped land, gradually sloping up to the northeast from elevations of 225 feet at its south border along Skyway to 267 feet on the north border along E. 20<sup>th</sup> Street. Historic uses of the property have been open grazing land, although that use has been much less active during the past 25 years. All of the site's parcels are vacant, undeveloped land containing vernal pools, non-native annual grasses and known populations of Butte County Meadowfoam (BCM), a state and federally listed endangered species. Sparse blue oak trees are located in the southeastern portion of the site, and some riparian woodland tree species and habitat are in the south-central portion along the Butte Creek Diversion Channel. The most abundant animal life on-site includes small mammals, various songbirds, and foraging raptors. The Butte Creek Diversion Channel runs in a north-south direction through the eastern portion of the site, about midway between Bruce Road and

old Potter Road (now the Steve Harrison Memorial Bike Path, a Class-I paved bike path maintained by the City of Chico). Along both sides of the bike path are historic walls comprised of stacked volcanic boulders. Refer to Figure III-2 for an aerial photograph of the project site and Figure III-3 for an existing parcels and zoning exhibit of the site. Existing views of the site are shown in Figures III-4 and III-5.

### General Plan and Zoning Designation

The project site is undeveloped open space and has historically been used for winter grazing land. Table III-1 below describes the City General Plan designations and zoning districts for the affected parcels. As described in more detail below in Section II.B, the proposed project includes General Plan Land Use Diagram amendments and rezoning.

**Table III-1  
Existing General Plan and Zoning Land Uses**

<b>APN/acres</b>	<b>Existing GP Designation</b>	<b>Existing Zoning District</b>
002-190-041 / 48.0 acres	LDR/RCO OMU/RCO	R1-RC OR-RC
018-510-007 / 100.2 acres	VLDR/RCO POS SOS	RS-20-PD-RC OS1 OS2
018-510-008 / 111.1 acres	LDR/RCO MHDR/RCO SOS	R1-RC R3-RC OS2
018-510-009 / 53.7 acres	LDR/RCO OMU/RCO SOS	R1-RC OR-RC OS2
002-220-006 / 7.75 acres <sup>1</sup>	SOS	OS2
<sup>1</sup> Approximately 1.0 acre of this parcel would be included in the proposed project.		

*General Plan Designations:*

VLDR – Very Low Density Residential (0.2 to 2.0 units/gross acre)  
LDR – Low Density Residential (2.1 to 7.0 units/gross acre)  
MDR – Medium Density Residential (6 to 14 units/gross acre)  
MHDR – Medium-High Density Residential (14.1 to 22 units/gross acre)  
CMU – Commercial Mixed Use (6.0 to 22 units/gross acre)  
OMU – Office Mixed Use (6.0 to 20.0 units/gross acre)  
RCO – Resource Constraint Overlay  
POS – Primary Open Space  
SOS – Secondary Open Space

*Zoning District:*

RS-20 – Suburban Residential (20,000sf minimum lot size, consistent with VLDR designation)  
R1 – Low Density Residential (consistent with LDR designation)  
R2 – Medium Density Residential (consistent with MDR designation)  
R3 – Medium High Density Residential (consistent with MHDR designation)  
CC – Community Commercial (consistent with Community Commercial GP designation)  
OS1 – Primary Open Space  
OS2 – Secondary Open Space  
-RC – Resource Constraint Overlay  
-PD – Planned Development Overlay

**Surrounding Land Uses**

The project site is located adjacent to urban uses on its north side (single- and multi-family residential), on its west side (single-family), and on the south (commercial). The Chico Unified School District owns property adjacent to the project site on the southwest side for potential use as a high school. To the east is private, undeveloped grazing land under Butte County jurisdiction (located in the City's proposed sphere of influence), sloping gently up in elevation to rolling foothill terrain. Designated as a Special Planning Area (SPA) by the City of Chico General Plan, this undeveloped land to the east is conceptually planned for development with a broad spectrum of uses. Adjacent roadways include Bruce Road, E. 20<sup>th</sup> Street, and Skyway. Views of the surrounding land uses are shown in Figure III-6.



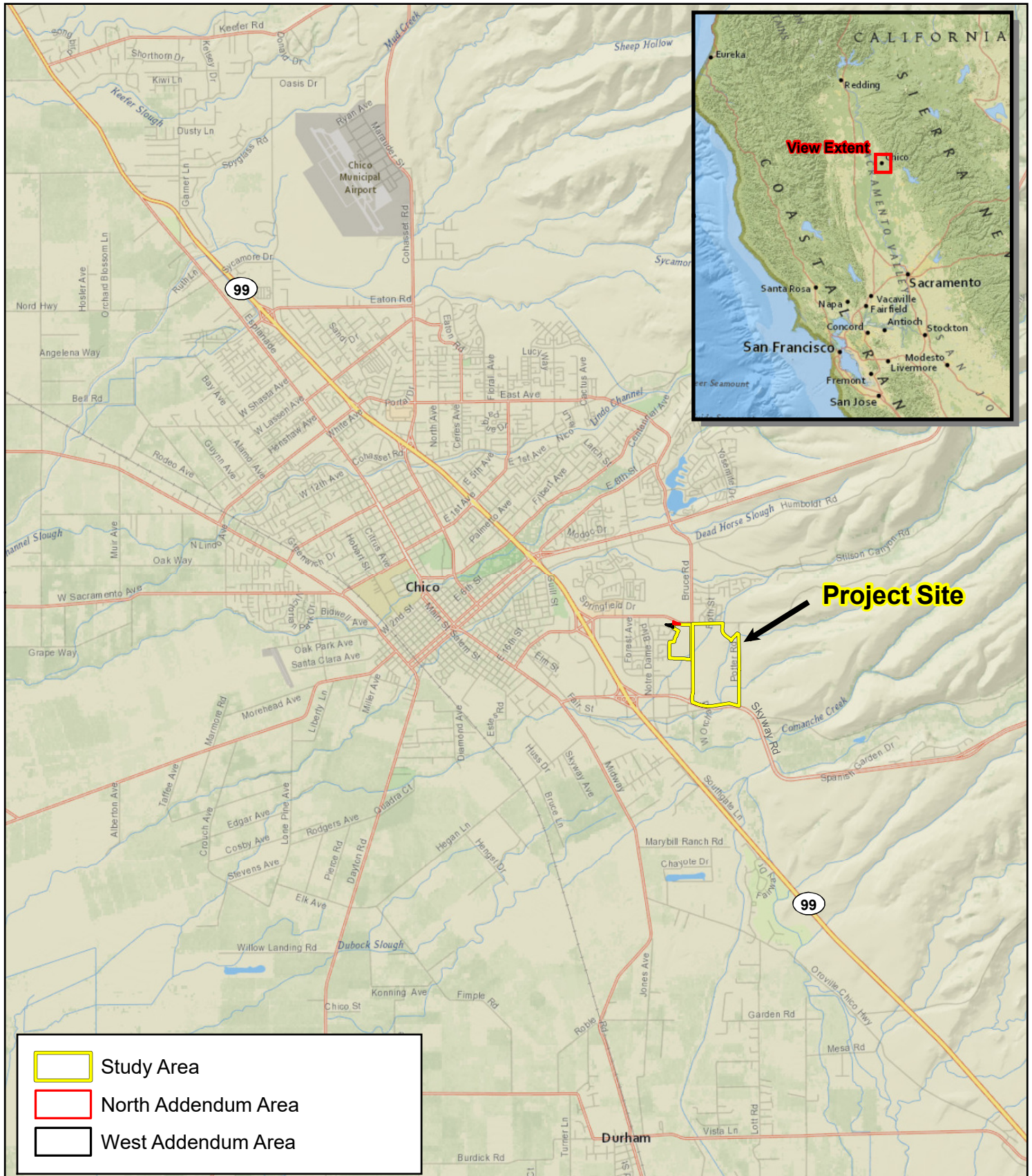


Figure III-1. Project Site Location Map

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California

0 0.5 1 2  
Miles



Map Prepared Date: 2/10/2017  
Map Prepared By: mrochelle  
Base Source: Esri, National Geographic  
Data Source(s): Rolls Anderson & Rolls Engineers



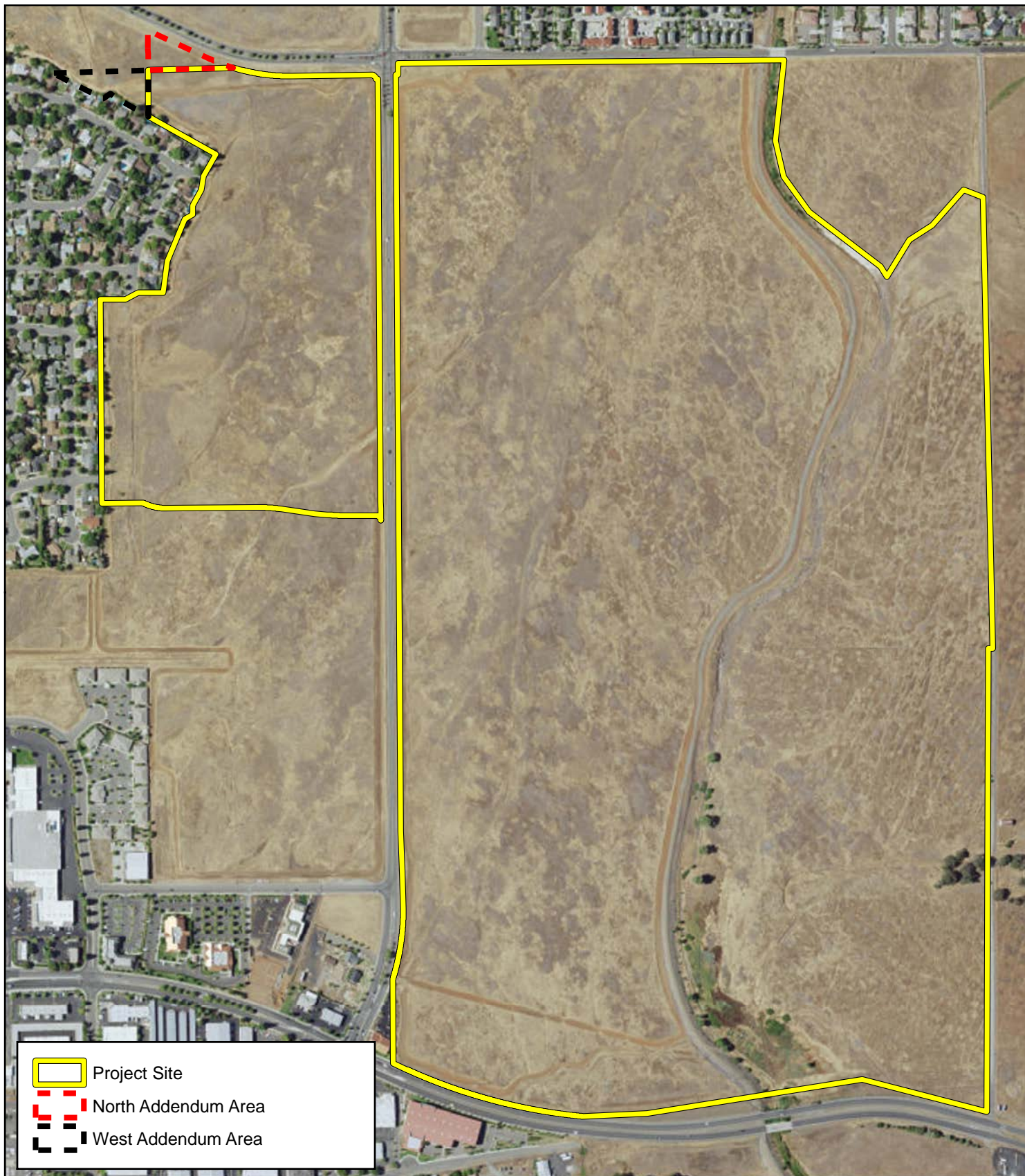


Figure III-2. Project Site Aerial

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



0 250 500 1,000  
Feet

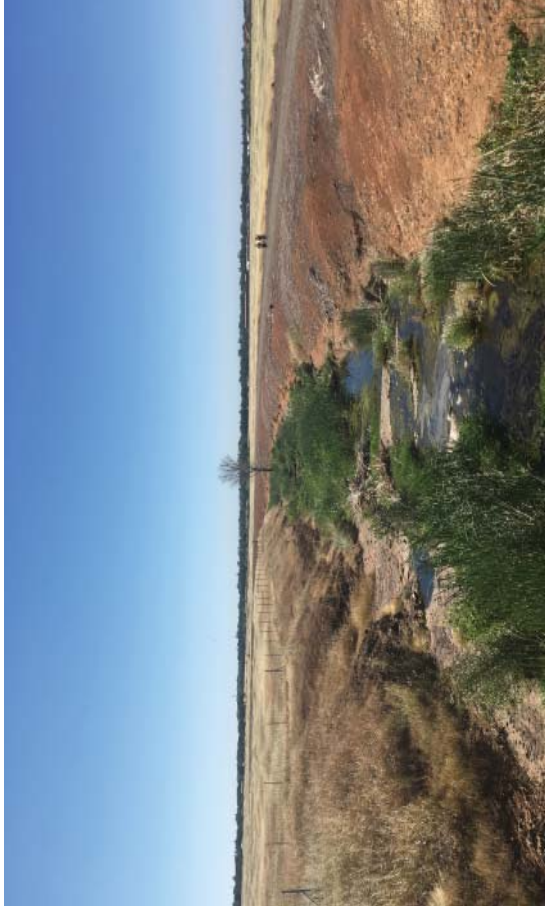


Map Prepared Date: 2/10/2017  
Map Prepared By: mrochelle  
Base Source: 2014 NAIP Imagery  
Data Source(s): Rolls Anderson & Rolls Engineers

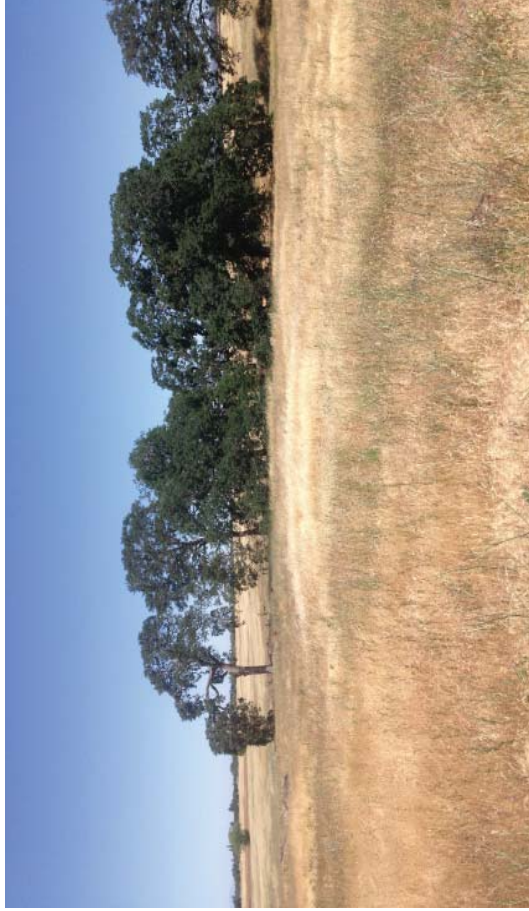




**View 1.** View of the project site looking southwest from E. 20th Street.



**View 2.** View of the project site looking south from E. 20th Street.



**View 3.** View of the project site looking north from Skyway.



**View 4.** View of the project site looking east from Skyway.

**Figure III-3. Views of the Project Site**

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California





**View 1.** View of the project site looking north along the Butte Creek Diversion Channel.



**View 2.** View of the project site looking east from E. 20th Street.



**View 3.** View of the project site looking south from the gravel road adjacent to the Butte Creek Diversion Channel.



**View 4.** View of the project site looking west from the Butte Creek Diversion Channel.

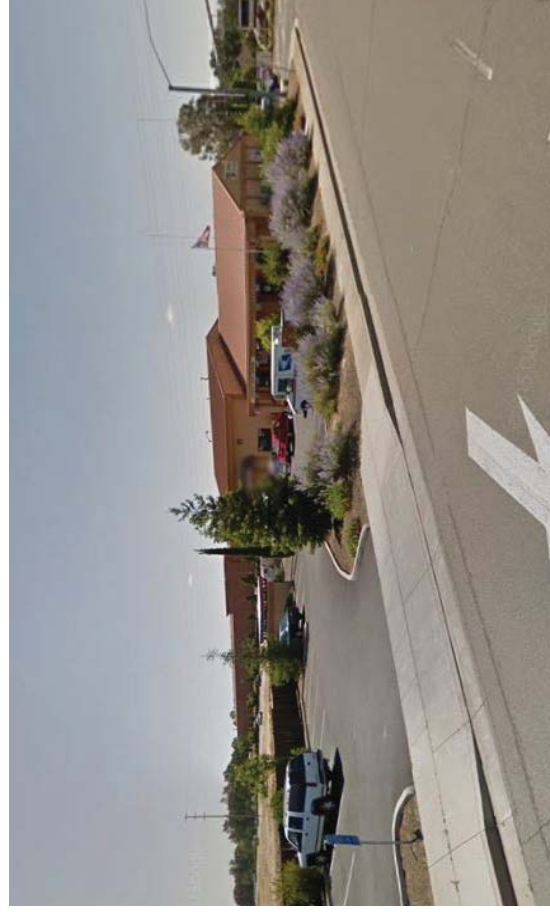
Figure III-4. Views of the Project Site

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

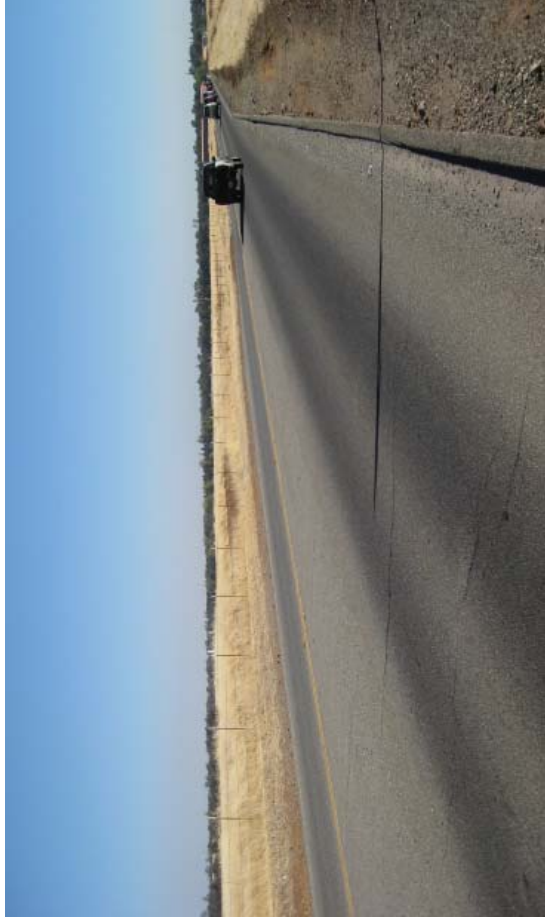




**View 1.** View looking north from the project site towards the homes along E 20th Street.



**View 2.** View looking east from Bruce Road of commercial development abutting the southern end of the project site.



**View 3.** View looking north from of the intersection of Raley Boulevard and Bruce Road.



**View 4.** View looking west from the project site towards homes on Roberto Court.

Figure III-5. Views of Surrounding Land Uses

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

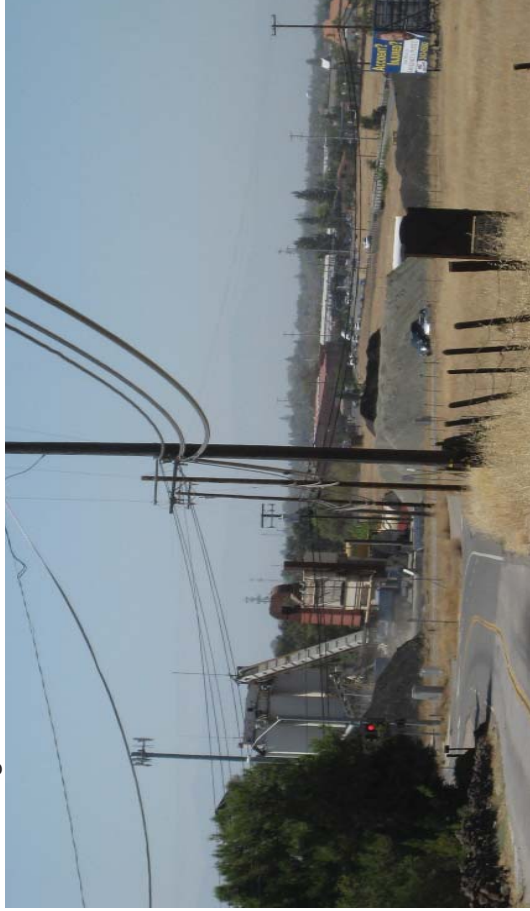




**View 1.** View from the project site looking north towards a residential neighborhood.



**View 2.** View of vacant land east of the project site from Skyway.



**View 3.** View looking southeast from the southern border of the project site towards the industrial use.



**View 4.** View of commercial uses south of the project site.

Figure III-6. Views of Surrounding Land Uses

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

## B. PROJECT DESCRIPTION

Epick Homes (applicant) proposes to subdivide the project site into a combination of open space, public right-of-way, park, single-family residential standard lots, single-family residential half-acre lots, multi-family residential lots, and commercial lots (proposed project). The proposed project consists of the Stonegate Subdivision Vesting Tentative Subdivision Map, (see Figures III-7 and III-8), and related permits and approvals necessary for implementation of the proposed subdivision. The Stonegate subdivision totals approximately 313 acres on four parcels and proposes to create the following parcel sizes and uses:

- Open Space: 108.8 acres
- Public right-of-way dedication: 41.8 acres
- Public right-of-way abandonment: 0.3 acres
- Bicycle Path: 0.7 acres
- Park: 3.3 acres
- Single-family residential, standard lots (424 lots): 81.0 acres
- Single-family, half-acre lots (45 lots): 22.3 acres
- Multi-family residential: 13.4 acres
- Commercial: 36.6 acres
- Stormwater facility: 5.4 acres
- Land transfer from the project site to the City: 1.0 acre
- Land transfer from the City to the project site: 0.8 acres

The proposed project includes zone changes and General Plan amendments to establish Primary Open Space in APN 018-510-008 and 018-510-009 and to reconfigure the residential and commercial designations throughout the site. These changes are proposed in order to meet the objectives listed below in Section III.C (Project Objectives). Proposed General Plan designations and zoning districts are provided in Table III-2 below.

**Table III-2  
Existing vs. Proposed General Plan Designations and Zoning Districts**

<b>APN/acres</b>	<b>Existing GP</b>	<b>Proposed GP</b>	<b>Existing Zoning</b>	<b>Proposed Zoning</b>
002-190-041 / 48.0 acres	LDR/RCO OMU/RCO	LDR MDR CMU/	R1-RC OR-RC	R1 R2 CC
018-510-007 / 100.2 acres	VLDR/RCO POS SOS	VLDR POS SOS	RS-20-PD-RC OS1 OS2	RS-20 OS1 OS2
018-510-008 / 111.1 acres	LDR/RCO MHDR/RCO SOS	LDR CMU POS SOS	R1-RC R3-RC OS2	R1 CC OS1 OS2
018-510-009 / 53.7 acres	LDR/RCO OMU/RCO SOS	LDR CMU MDR POS SOS	R1-RC OR-RC OS2	R1 CC R2 OS1 OS2
002-220-006 / 7.75 acres	SOS	SOS CMU/RCO	OS2	OS2 CC

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The City of Chico General Plan Diagram illustrates that the project site is located entirely within a Resource Constraint Overlay (RCO) which acknowledges the existence of sensitive biological resources including vernal pools and populations of Butte County Meadowfoam (BCM). Fifteen percent of the average development potential for the underlying land use designation on the RCO sites was assumed in estimating the overall density and intensity of General Plan build-out and to conduct environmental review for the General Plan. According to the General Plan, landowners of RCO parcels may conduct more detailed studies, including environmental review, and coordinate with resource agencies to determine actual development potential. Such potential may be more or less than the assumed 15 percent, but not more than the maximum development potential allowed by the underlying land use designations. As proposed, the project would develop approximately 65 percent of the site.

### **Proposed Land Use Development**

Descriptions of development anticipated within the proposed project have been provided by the applicant and adapted into the sub-headings below. With regard to future multi-family residential and commercial uses (Lots 470 through 474), no specific proposals for development have been made, thus the descriptions below represent a vision of how these lots on the proposed tentative subdivision map could develop. For the purposes of this EIR, more-conservative assumptions for development in these areas are made, such that the level of development anticipated by the applicant falls well within the scope of EIR analysis.

#### *Open Space*

The proposed project would include approximately 108 acres of open-space. The open space would include grassland habitat intermixed with a variety of seasonal wetlands, vernal pools, natural drainages, and a segment of the Butte Creek Diversion Channel. The open space would support two large populations of the federal and state endangered BCM, one east and one west of the diversion channel. A street, park, and pedestrian/bike path along the western boundary of the open space would separate this area from adjacent land uses and provide views of the area. The proposed project may include development of a long-term management plan for the open space, including vegetation management practices. The open space would also include a portion of the watershed of Butte Creek, which supports populations of anadromous fish listed under the Endangered Species Act (ESA). The preserve may have educational signage along areas overlooking the open space. The proposed open space would be located immediately south of the City's Doe Mill Preserve, a small BCM preserve, connecting the two resources.

#### *Single Family Residential*

This land use would incorporate homes on lots of various sizes. The proposed project lays out five different densities of single family housing amongst 469 total lots. Smaller lots would be located closer to areas planned for multi-family residential land uses. Larger single-family residential lots would be located near open space preserves, interior to the project.

*Multi-Family Residential*

The proposed project includes two lots that would be zoned R2 (which permits 6 to 14 units per gross acre) and developed with multi-family residential units. Lot 470 would be 11.8 gross acres (9.4 net acres), and Lot 473 would be 4.8 gross acres (4.0 net acres). The applicant anticipates that multi-family residential uses would include up to 208 units within two-story apartment buildings (up to 35 feet in height), with shared outdoor common areas and parking. This level of development corresponds to approximately 12.5 units per acre.

For the purposes of this EIR, it is assumed that up to 233 units may be constructed on these lots. These assumptions correspond to a build-out of these lots at approximately 14 units per acre.

*Southern Commercial*

The project includes a 14.6-acre lot (Lot 472) near its southerly end that would be zoned CC (Community Commercial). Given the proposed zoning, proximity to the Skyway, and nearby medical uses along the Skyway, the applicant anticipates that this southern commercial property would likely be developed with medical office uses comprised of one large building or multiple buildings, totaling up to 195,000 square feet.

For the purposes of this EIR, it is assumed that up to 205,000 square feet of medical/dental offices may be developed on Lot 472.

*Northern Commercial*

Northern commercial properties would include a 20-acre lot (Lot 471) and a 2-acre lot (Lot 474), located at the southwest and southeast corners of East 20th Street at Bruce Road, respectively. These commercial lots would be zoned CC (Community Commercial), and the applicant anticipates that they will likely be developed with a mix of retail uses totaling up to 201,000 square feet.

For the purposes of this EIR, it is assumed that between 220,000 and 240,000 square feet of commercial uses may be constructed on Lots 471 and 474.

*Land Transfer<sup>1</sup>*

A land transfer with the City of Chico is proposed for the west side of the Northern Commercial development, adjacent to East 20th Street. This aspect of the project would transfer ownership of a 0.80-acre triangle-shaped property owned by the City to Lot 471, in exchange for a similarly-shaped 1.0-acre piece of property located at the northwestern extremity of Lot 471. The purpose of this land transfer is to create better use efficiencies for the future commercial development, while also shifting higher-quality wetlands into a City open space preserve. If this aspect of the project is approved, then the developer

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<sup>1</sup> The City of Chico has not approved such a land transfer. The applicant will be required to gain the necessary approvals from the City in a separate process for this land transfer to occur.

will be required to effectuate the land transfer by submitting a Boundary Line Modification or similar application.

### **Grading, Drainage and Utilities**

Development of the proposed project would require the preparation of a detailed grading, stormwater runoff, and erosion control plan subject to the review and approval of the City. Grading would be completed in such a manner as to ensure that all lots would have a positive one (1) percent minimum slope.

Portions of the site located west of the Butte Creek Diversion Channel (APNs 002-190-041, 018-510-008, and 018-510-009) are located in the Comanche Creek Drainage Area. Stormwater runoff from future development on these properties would be conveyed via a new network of local lines connecting to existing storm drain lines that collect runoff from two or three Comanche Creek Drainage Area sub basins. Stormwater runoff would be treated within the limits of the proposed development or the City's Fair Street Detention Facility, depending upon where the runoff originates. Development of APN 018-510-007 (east of the Butte Creek Diversion Channel) would result in the construction of a network of both local and outfall lines that would discharge into the Butte Creek Diversion Channel.

The City of Chico would provide municipal sewer collection and treatment services, while the California Water Service Company (Cal Water) would provide water service to the proposed project. The City is also responsible for maintenance of storm drains that stormwater runoff from the proposed project would utilize. Natural gas and electricity for the proposed project would be provided by Pacific Gas & Electric (PG&E). Utilities may be extended to the proposed single-family residential lots on APN 018-510-007 within the Skyway right-of-way or from APN 018-510-008. This utility extension could be constructed by open trenching, bore and jack or other method. An extension from APN 018-510-008 would require crossing the diversion channel and construction through the proposed project open space in Parcel D.

### **Tree Loss**

There are no existing trees on the site, except within the diversion channel and proposed open spaces. As such, the project does not include any tree removal.

### **Site Access, Circulation, and Parking**

Circulation for the proposed project would include improvements to existing roadways as well as the creation of new public roads (Figures III-7 and III-8). Access to the project is proposed via connections to Bruce Road, East 20<sup>th</sup> Street, Webster Drive, Laredo Way, Niagara Way, and Skyway. The project's internal circulation system would provide access to the proposed uses, as seen in Table III-3. Each street would feature a curb and gutter system with 5-foot sidewalks and 7-foot parkway strips. A new traffic signal is proposed where Webster Drive connects to Bruce Road. A Class 1 bike/pedestrian path is also proposed along the west side of Bruce Road, with a two-foot wide clear area on either side of the path.

**Table III-3  
Proposed Circulation**

<b>Street Name and Extent</b>	<b>Right-of-Way</b>	<b># Travel Lanes</b>	<b>Median</b>	<b>Bike Lane/ Parking/ Curb/ Gutter</b>	<b>Parkway/ Sidewalk</b>	<b>Class 1 Path</b>
Bruce Road (from north of Laredo Way to East 20th)	49' (East) 52' (West)	4	7' (East/West)	5' (East/West) 2' bike buffer	12' Combined (East) 7' (West)	8' (West)
Bruce Road (from Webster Drive to north of Laredo Way)	57'-62' (East) 52' (West)	4	7' (East/West)	5' (East/West) 2' bike buffer	20'-25' (East) 7' (West)	8' (West)
Bruce Road (from Raley Blvd. to Webster Drive)	57'-62' (East) 40' existing (West)	3 (2 proposed/ 1 existing)	7' (East)	5' (East) 2' bike buffer	20'-25' (East)	N/A
Bruce Road (south of Raley Blvd.)	50' (East) 40' existing (West)	3 (2 proposed/ 1 existing)	7' (East)	5' (East) 2' bike buffer	12' (East)	N/A
Laredo Way (approaching Bruce Road)	36' (East/West)	2	7' (East/West))	7' (East/West)	12' (East West)	N/A
Webster Drive (from Street Q to Bruce Road)	32' (North/South)	2	7' (North/South)	N/A	12' (North/South)	N/A
Webster Drive (west of Street Q)	24' (East/West)	2	N/A	N/A	12' (East/West)	N/A
Baroni Drive/Raley Blvd.	32' (East/West)	2	N/A	8' (East/West)	12' (East/West)	N/A
East 20 <sup>th</sup> Street (west of Bruce Road)	50' (North/South)	3 (1 proposed/ 2 existing)	7' existing (North/South)	5' (North/South)	12' (South)	N/A
East 20 <sup>th</sup> Street (from Bruce Road to 400 feet east of Bruce Road)	38' existing (North) 40' (South)	2 existing	7' existing (North/South)	8' existing (North) 8' (South)	10' existing (North) 12' (South)	N/A
East 20 <sup>th</sup> Street (from 400 feet east of Bruce Road to east end of project site)	30' existing (North) 32' (South)	2 existing	N/A	8' existing (North) 8' (South)	10' existing (North) 12' (South)	N/A

Street Name and Extent	Right-of-Way	# Travel Lanes	Median	Bike Lane/ Parking/ Curb/ Gutter	Parkway/ Sidewalk	Class 1 Path
Street N (approaching Bruce Road)	36' (East/West)	2	7' (East/West)	7' (East/West)	12' (East/West)	N/A
Street T (Adjacent to Parcel D)	29' (East) 16' (West)	2	N/A	7' (East)	12' (East)	N/A
Street G (Bruce Road to Parcel B)	45' (East/West)	2	7' (East/West)	N/A	25' (East/West)	N/A
Street A (Adjacent to Parcels C and D)	16' (East) 29' (West)	2	N/A	7' (West)	12' (West)	N/A
Minor Residential (Streets B through Wand segments of Street A and Laredo Way not listed above)	29' (each direction)	2	N/A	7' (each direction)	12' (each direction)	N/A

## C. PROJECT OBJECTIVES

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Enhance public access to and protect the integrity of the Butte Creek Diversion Channel and adjacent habitats;
- Create residential neighborhoods in the project that offer a variety of housing types at various densities and price points to help meet the City's housing needs;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide commercial centers near major intersections to serve the surrounding residential neighborhoods and greater community; and
- Provide revenue to local businesses during project construction and operation.

## D. REQUIRED PERMITS AND APPROVALS

This Draft EIR serves as the environmental document for all discretionary actions associated with development of the proposed project. This Draft EIR is intended to cover all state, regional, and/or local government discretionary approvals that may be required to develop the proposed project, whether or not they are explicitly listed below. 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

- Vesting Tentative Subdivision Map
- General Plan Amendment
- Rezone
- Boundary Line Modification
- Development Agreement
- Grading permits
- Building permits

**Regional Water Quality Control Board**

- Construction Stormwater Permit
- Clean Water Act Section 401 water quality certification and/or Waste Discharge Requirements

**State Department of Fish and Wildlife**

- California Fish and Game Code Section 1602 Lake or Streambed Alteration Agreement
- California Fish and Game Code Section 2081 Incidental Take Permit

**U.S. Army Corps of Engineers**

- Clean Water Act Section 404 Permit, Habitat Mitigation Monitoring Proposal

**U.S. Fish and Wildlife Service**

- Endangered Species Act Section 7 Biological Opinion
- Incidental take permit under the Federal Endangered Species Act (ESA)



## E. RELATED PROJECTS

Sections 15126 and 15130 of the State CEQA Guidelines provide that EIRs consider the significant environmental effects of a proposed project as well as “cumulative impacts.” Cumulative impacts refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts (CEQA Guidelines Section 15355). Cumulative impacts may be analyzed by considering a list of past, present, and probable future projects producing related or cumulative impacts [CEQA Guidelines Section 15130(b)(1)(A)].

State CEQA Guidelines Section 15130(b)(1) identifies two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects (projects) and the use of projections contained in relevant planning documents (projections). For this Draft EIR, both the projects and the projections approach have been combined to generate the most reliable future projections possible.

### Cumulative Significance Criteria

For purposes of this Draft EIR, the proposed project would have a significant cumulative effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the proposed project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or
- the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the proposed project makes a considerable contribution to the effect. The standards used herein to determine considerability are that either the impact must be substantial or must exceed an established threshold of significance.

### Geographic Context

The geographic area that could be affected by implementation of the proposed project in combination with other projects varies depending on the type of environmental resource being considered. The general geographic area associated with different types of environmental effects of the project defines the scope of the area considered in the cumulative impact analysis (see Table III-4). Also listed is the method of evaluation used to analyze cumulative impacts for each environmental resource (described further above).

**Table III-4  
Geographic Scope of Cumulative Impacts and Method of Evaluation**

<b>Resource Issue</b>	<b>Geographic Area</b>	<b>Method of Evaluation</b>
Aesthetics	Immediate project vicinity	Projects
Agriculture & Forestry Resources	Regional and local	Projects
Air Quality	Local (toxic air contaminants and odors) Air Basin (construction-related and mobile sources)	Projects and Projections
Biological Resources	Regional and local	Projects
Cultural Resources	Project site only	Projects
Geology / Soils	Immediate project vicinity	Projects
Greenhouse Gas Emissions	Global	Projections
Hazards & Hazardous Materials	Project site only	Projects
Hydrology / Water	Immediate project vicinity and Butte Creek watershed	Projects
Land Use / Planning	Immediate project vicinity	Projects
Mineral Resources	Project site only	Projects
Noise	Immediate project vicinity (effects are highly localized)	Projects
Population / Housing	Regional and local	Projects and Projections
Public Services	Regional and local	Projects and Projections
Recreation	Regional and local	Projects and Projections
Transportation / Traffic	Regional and local	Projections
Tribal Cultural Resources	Project site only	Projects
Utilities / Service Systems	Regional and local	Projects and Projections
Notes: Projects = the use of a list of past, present, and probable future projects; Projections = the use of projections contained in relevant planning documents.		

For those environmental resources that were evaluated based on the projections approach, the projections take into consideration future projects that are not included in the below list of related plans and projects.

### **List of Cumulative Plans and Projects**

Table III-5 lists the related (or cumulative) projects identified for the proposed project. These related projects comprise an exhaustive list of approved, proposed, or projects currently under construction in the City of Chico at the time the Notice of Preparation for this EIR was released (June 2016). The list includes projects of various land uses, including (but not limited to) single-family residential, multi-family residential, commercial, and retail. For an analysis of the

cumulative impacts associated with these related projects and the proposed project, the reader is referred to the cumulative impact discussions under each individual impact category in Chapter IV of this Draft EIR.

**Table III-5  
Related Projects**

<b>Related Project Number</b>	<b>Name and Location</b>	<b>Units/Lots</b>	<b>Lot Size</b>	<b>Status</b>
<b>Residential Development</b>				
1	<b>Belvedere Heights 2</b> E 20th St / Dawncrest Dr	92 Lots 92 Units	21.8 Acres	Approved Tentative Map
2	<b>Mission Vista Ranch 2</b> Humboldt Rd / Morning Rose Way	17 Lots 17 Units	2.4 Acres	Approved Tentative Map
3	<b>Humboldt Trail Estates</b> 1 Overseer Ct.	17 Lots 17 Units	2.6 Acres	Approved Tentative Map
4a	<b>Meriam Park Remaining Land</b> E 20th St / Bruce Rd	2,104 Units	71.5 Acres	Approved Tentative Map
4b	<b>Meriam Park Phs 1-4</b> E 20th St / Bruce Rd	151 Lots 194 Units	109.8 Acres	Approved Tentative Map
4c	<b>Meriam Park Phs 5-8</b> E 20th St / Hartford Dr	7 Lots 200 Units	23.3 Acres	Recorded Final Map
5	<b>Twin Creeks</b> Canyon Oaks Pcl 8	16 Lots 16 Units	68.1 Acres	Approved Tentative Map
6a	<b>Wildwood Estates</b> Eaton Rd / Cactus Ave	112 Lots 112 Units	17.8 Acres	Approved Tentative Map
6b	<b>Wildwood Estates</b> Eaton Rd / Cactus Ave	59 Lots 59 Units	10.7 Acres	Recorded Final Map
7	<b>Oak Valley 1</b> Humboldt Rd	126 Lots 295 Units	43.0 Acres	Recorded Final Map
8	<b>Sycamore Glen</b> Eaton Rd / Mariposa Ave	198 Lots 198 Units	33 Acres	Recorded Final Map
9	<b>Foothill Park East Unit 7</b> St Lawrence Ave	68 Lots 65 Units	19.1 Acres	Approved Tentative Map
10	<b>Mountain Vista Subdivison</b> Eaton Road Floral Ave	211 Lots 211 Units	34.1 Acres	Recorded Final Map
11	<b>Domicile Subdivision</b> 2434 Floral Ave	8 Lots 8 Units	1.3 Acres	Approved Tentative Map
12	<b>Hampton Court</b> 2875 Marigold Ave	19 Lots 19 Units	5.0 Acres	Approved Tentative Map
13	<b>The Estates</b> 1982 Hooker Oak Ave	9 Lots 9 Units	2.8 Acres	Approved Tentative Map

Related Project Number	Name and Location	Units/Lots	Lot Size	Status
14	<b>Avila Estates</b> 216 Centennial Ave	17 Lots 17 Units	2.4 Acres	Proposed
15	<b>Estates at Lindo Ch</b> 1511 Mazanita Ave	22 Lots 22 Units	5.0 Acres	Proposed
<b>Multi-Family Development</b>				
16	<b>Lava Ridge Apts (Oak Valley)</b> Native Oak Dr / Hwy 32	98 Units		Plan Check
17	<b>Sycamore Glen</b> Eaton Rd / Mariposa Ave	100 Units	6.8 Acres	Approved Tentative Map
18	<b>Mountain Vista</b> Eaton Road / Floral Avenue	133 Units	8.6 Acres	Approved Tentative Map
19	<b>Oakdale Apartments</b> 1709 Oakdale St	36 Units	0.8 Acres	Construction
20	<b>Chico Senior Living Complex</b> 2950 Sierra Sunrise Terr	77 Units (Assisted Living)	1.9 Acres	Plan check
21	<b>Fiore di Monte Apartments</b> Nord Hwy	156 Units	7.9 Acres	Plan check
22	<b>Carriage Park Apartments</b> 1975 Bruce Rd	141 Units	7.1 Acres	Construction
<b>Commercial, Mixed Use, and Miscellaneous Development</b>				
23	<b>Holiday Inn Hotel</b> 2080 E 20 <sup>th</sup> St	N/A	93 Rooms	Pre-Plan check
24	<b>Ulta Store Beauty Supplies</b> 2068 Dr MLK Jr Pkwy	N/A	10,000 sf	Plan check
25	<b>Crepeville Restaurant (infill)</b> 240 Main St	N/A	N/A	Plan check
26	<b>Surfs Up Car Wash</b> Forest Ave	N/A	4,900 sf	Pre-Plan check
27	<b>Dutch Bros Coffee Drive Thru</b> 196 Humboldt Ave	N/A	640 sf	Construction
Source: City of Chico, March, 2016				

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### A. IMPACTS FOUND TO BE LESS THAN SIGNIFICANT

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Section 15128 of the CEQA Guidelines states:

*“An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Such a statement may be contained in an attached copy of an Initial Study.”*

An Initial Study was prepared for the proposed project (see Appendix A of this DEIR). In the course of this evaluation, certain impacts were found to be less than significant because the proposed project's characteristics would not create such impacts. This section provides a brief description of effects found not to be significant or less than significant, based on the NOP comments or more detailed analysis conducted as part of the EIR preparation process

#### **Aesthetics**

*The project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.*

The project is not located adjacent to or within the proximity of a state listed scenic highway. Therefore, the proposed project would not substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway and no impacts would occur.

#### **Agricultural and Forestry Resources**

*The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.*

The Farmland Mapping and Monitoring Program (“FMMP”) designates the site as “Grazing” or “Other Land”.<sup>1</sup> Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. No impact would result and no further analysis of this issue is required.

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<sup>1</sup> California Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Butte County Important Farmland 2014. <http://maps.conservation.ca.gov/ciff/ciff.htm>. Accessed May 17, 2016.

*The project would not conflict with existing zoning for agricultural use, or a Williamson Act Contract.*

The project site includes the following existing and proposed zoning districts: RS-20, R1, R3, CC, OR, OS1, OS2, with RC and PD overlays. Therefore, no conflict with existing or proposed zoning for agriculture would result from project implementation. The project site is not under Williamson Act Contract. No impact would result and no further analysis of this issue is required.

*The project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).*

The project site includes the following existing and proposed zoning districts: RS-20, R1, R3, CC, OR, OS1, OS2, with RC and PD overlays. As such, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. No impact would result and no further analysis of this issue is required.

*The project would not result in the loss of forest land or conversion of forest land to non-forest use.*

No forest land is present within the project site. No impact would result and no further analysis of this issue is required.

*The project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.*

No agriculture or forest land uses are located on or in close proximity to the project site. No impact would result and no further analysis of this issue is required.

## **Air Quality**

*The project would not create objectionable odors affecting a substantial number of people.*

According to the BCAQMD, the types of projects that commonly result in odor impacts include: agricultural and food processing facilities, landfills, composting facilities, and wastewater treatment plants. The proposed project does not include any of these uses and would not create objectionable odors that would affect a substantial number of people. The project site is not affected by existing odor sources that would cause odor complaints from new residents. Therefore, odor impacts are less than significant.

## **Cultural Resources**

*The project would not disturb any human remains, including those interred outside of formal cemeteries.*

No human remains are known to exist on the project site. It is possible that unknown resources could be encountered during project construction, particularly during ground-disturbing activities such as excavation and grading. However, as required by State law, if human remains are discovered at the project site during construction, work at the specific construction site at which remains have been uncovered shall be suspended, and the appropriate City and County agencies immediately notified. If remains are determined by the County coroner to be Native America, 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. Therefore, project impacts to unknown human remains would be less than significant and no further analysis of this issue is required.

## **Geology & Soils**

*The project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.*

Potential impacts from landslides are low on the project site due to the lack of significant slopes. The project site is flat, with minimal changes in elevation. Therefore, the project would result in a less than significant impact and no further analysis of this issue is required.

*The project would not 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.*

No impact is anticipated related to the use of septic tanks or other wastewater disposal systems as the proposed project would connect sewer lines to the existing sewer mains. There are no current septic tanks or other wastewater disposal systems on the site. Therefore, no impacts are anticipated and no further analysis is required.

## **Hazards and Hazardous Materials**

*The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.*

Full implementation of the proposed project would result in the routine handling and use of small quantities of commercially-available hazardous materials, such as household cleaning and landscaping supplies. Additional, commercial uses may routinely use other forms of hazardous materials in the operation businesses. These materials would not be expected to be used in large quantities or contrary to normal uses permitted by law, and therefore would not pose a threat to human health or the environment. Compliance with existing state and federal laws and regulations would reduce potentially significant impacts related to commercial and residential uses to a less than significant impact on the public or the environment related to the routine



transport, use, and handling of hazardous materials, since such activities are not expected. No further analysis is required.

*The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.*

The proposed project is the subdivision of 313 acres and the development of infrastructure, as well as the eventual construction of residential and commercial land uses. Therefore, the project is not expected to generate or use high levels of hazardous materials during its operation. In addition, on-site handling and storage of hazardous materials would be done according to all applicable local, state, and federal regulations. No upset or accident conditions resulting in the release of hazardous material into the environment can be reasonably expected to occur during operation of the project and therefore this impact would be less than significant and no further analysis is required.

*The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

Children are more susceptible to health effects from exposure to hazardous materials than adults. Hazardous materials use near schools and day care centers must consider potential health effects to these populations. Castles Preschool is located within ¼ mile of the project site. All commercial use would be required to comply with existing state and federal laws and regulations. Hazardous materials required for construction of the project have the potential for accidental release. However, in the event of a hazardous material spill or release, notification and cleanup operations would be performed in compliance with federal and state regulations and therefore impacts would be less than significant.

*The project would not 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, create a significant hazard to the public or the environment.* The provisions of Government Code 65962.5 require the Department of Toxic Substance Control ("DTSC"), the State Water Resources Control Board, the California Department of Health Services, and the California Integrated Waste Management Board to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to the Secretary of Cal/EPA. Based on a review of regulatory databases,<sup>2</sup> including listed hazardous materials release sites compiled pursuant to Government Code 65962.5, the project site is not listed as a hazardous materials site. The nearest active cleanup site is located at Bruce and Humboldt Roads, Highway 32, approximately 0.88 miles north of the project site. This site was previously a burn dump and landfill that is now an active cleanup site under the State's jurisdiction. Therefore, no impacts would occur.

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<sup>2</sup> State Water Resources Control Board, 2011. GeoTracker Environmental Database. <http://envirostor.dtsc.ca.gov/public/>. Accessed on May 17, 2016.

*The project site is not located within an airport land use plan or within area where such a plan has not been adopted, within two miles of public airport or public use airport, and would not result in a safety hazard for people residing or working in the project area.*

The project site is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is the Chico Municipal Airport located approximately 7.5 miles to the northwest of the project site. Therefore, the project would not expose people to safety hazards related to public airports. Therefore, no impacts would occur.

*The project is not within the vicinity of a private airstrip, and the project would not result in a safety hazard for people residing or working in the project area.*

The project site is not located within the vicinity of a private airstrip. Therefore, the project would not expose people to safety hazards related to private airstrips. Therefore, no impacts would occur.

### **Hydrology & Water Quality**

*The project would not be subject to inundation by seiche, tsunami, or mudflow.*

Tsunami and seiche hazards result from the impact of large waves and associated flood waters on land areas adjacent to open water (tsunamis) or closed water bodies (seiches). Tsunamis and seiches are not a significant hazard at the project site because the City of Chico is located far inland from any associated water body. No impacts associated with tsunamis and seiches are anticipated as a result of the proposed project. The potential for the project site to be inundated by mudflows is addressed in the Section IV-F. (Geology) of the Draft EIR.

### **Land Use Planning**

*The project would not physically divide an established community.*

The proposed project site is currently undeveloped and therefore would not divide an established community. Furthermore, the proposed project would allow for future development that includes connectivity to existing neighborhoods that promotes cohesiveness of the built environment. Therefore, no impacts would occur.

*The project would not conflict with any applicable habitat conservation plan or natural community conservation plan.*

The project site is not subject to a Habitat Conservation Plan, Natural Community Conservation Plan, or any other habitat plan. Therefore, development of the proposed project would not conflict with any habitat conservation plan. Therefore, no impacts would occur.

### **Mineral Resources**

*The project would not result in the loss or availability of a known mineral resource that would be of value to the region and the residents or the state.*

According to the City's General Plan, there are no active mines and no known areas with mineral resource deposits within the City, although historically several areas along Butte Creek were mined for gold, sand, and gravel. Therefore, the proposed project would not result in the loss or availability of a known resource that would be of value to the region and the residents or the state. Therefore, no impacts would occur.

*The project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.*

As discussed in the answer above, no locally-important mineral resource recovery sites are delineated in the General Plan or other land use plans. Therefore, no impacts would occur.

## **Noise**

*The project is not located within an airport land use plan, or any areas where such a plan has not been adopted within two miles of a public airport or public use airport, where the project would expose people or residing or working in the project area to excessive noise levels.*

The proposed project is not located near any public airport or public use airport. Therefore, no impacts would occur.

The project is not within the vicinity of private airstrip where the project would expose people residing or working in the project area to excessive noise levels. Therefore, no impacts would occur.

## **Population and Housing**

*The project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.*

There are no existing housing units on the project site. Therefore, the proposed project would not displace a substantial number of existing housing and no impacts would occur.

*The project would not displace substantial numbers of people necessitating the construction of replacement housing elsewhere.*

As discussed above, the project would not displace any people. Therefore, no impacts would occur.

**Transportation and Traffic**

*The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.*

This question would apply to the proposed project only if it were an aviation-related use. The project site does not contain any aviation-related uses, and the proposed project would not include the development of any aviation-related uses. Thus, the proposed project would have no impacts on air traffic patterns.

**Utilities and Service Systems**

*The project would comply with federal, state, and local statutes and regulations related to solid waste.*

The construction and operation of the proposed project would be required to adhere to all applicable federal, State, and local statutes and regulations related to solid waste. Therefore, no impacts would result with regard to compliance with federal, state, and local statutes and regulations related to solid waste.

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## **IV. ENVIRONMENTAL IMPACT ANALYSIS**

### **B. AESTHETICS**

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#### **INTRODUCTION**

This section addresses the subject of aesthetics resources, sometimes referred to as visual resources, with respect to the proposed Stonegate Subdivision and General Plan Amendment/Rezone project located in southeast Chico, CA (project). The setting begins with a description of existing visual conditions and an evaluation of potential aesthetic effects associated with implementing the proposed project.

The existing visual character of the project site is evaluated for its physical characteristics in the context of the surrounding setting and includes an evaluation of compatibility with surrounding land uses. The evaluation of visual character includes availability of specific views and the overall character of surrounding viewsheds. Viewsheds are groups of views with similar characteristics, defined by the available visible elements such as the horizon, topography, vegetation, roads, structures, and other natural and manmade features that give an area its unique visual signature and context. Development of all types, when combined with the natural setting becomes part of the overall visual character of an area.

Publicly accessible views, such as those from streets, sidewalks, parks, scenic roads and vista points are the subject of this CEQA analysis. Key Observation Points (“KOPs”) are selected by the lead agency, from a broader array of photographs, to be representative of the most sensitive publically accessible views. KOPs typically show the entire project area from designated scenic resources, such as parks or scenic roads. Visual impacts of a project consider the effect of the visual change made by the project to the visible characteristics of an area. A negative change in the visual character of an area, or the obstruction of existing scenic vista which has typically been available to the general public would be considered an impact. Visual impacts at nighttime are evaluated by considering sources of additional light and glare from the project.

#### **ENVIRONMENTAL SETTING**

##### **Regional Visual Character**

The general topography of the Butte County area is characterized by Sacramento Valley of California. The City’s topography within this Sacramento Valley varies from gentle slopes in the western portion of the City to increasing hilly terrain along the eastern edge into surrounding Butte County unincorporated land. SR 99 marks the edge of the western agricultural landscape and is the point where the elevation begins to rise and transition to the foothills in the east. The average elevation of the City of Chico is 230 feet above mean sea level. The City is bordered on the west by Hamilton City, on the north and south by unincorporated areas of Butte County,

and on the east by the City of Paradise. Chico lies approximately 90 miles north of Sacramento and 70 miles south of Redding.

The City is characterized by traditional grid patterns of development in the downtown center, and newer residential neighborhoods on the City's periphery. Natural water features within the City include Butte Creek, Big Chico Creek, Little Chico Creek, Comanche Creek/Edgar Slough, and Mud Creek that drain to the Sacramento River. Bidwell Park is a notable natural feature of the City, stretching over 10 miles along Big Chico Creek from the foothills of the Sierra Nevada Mountains (Upper Bidwell Park) to the valley floor (Lower Bidwell Park).

### **Local Visual Character**

As described in Section III (Project Description), the project site is located in the southeast quadrant of Chico along the east and west sides of Bruce Road, between E. 20<sup>th</sup> Street and the Skyway. The project site is generally level open space, gradually sloping up to the northeast from elevations of 225 feet at its south border along Skyway to 267 feet on the north border along E. 20<sup>th</sup> Street. Historic uses of the property have been open grazing land, although that use has been much less active during the past 25 years.

All of the site's parcels are vacant, undeveloped land containing vernal pools, non-native annual grasses, and known populations of Butte County Meadowfoam ("BCM"), a state and federally listed endangered species. Sparse blue oak trees are located in the southeastern portion of the site and some riparian woodland tree species and habitat are within the south-central portion along the Butte Creek Diversion Channel. The most abundant animal life on-site includes small mammals, various songbirds, and foraging raptors.

The Butte Creek Diversion Channel runs in a north-south direction through the eastern portion of the site, about midway between Bruce Road and old Potter Road (now the Steve Harrison Memorial Bike Path, a Class-I paved bike path maintained by the City of Chico). Along both sides of the bike path are historic walls comprised of stacked volcanic boulders. The visual character of the site can generally be described as vacant land. The primary character defining features on the project site are its existing vegetation (non-native grasslands and riparian woodlands), vernal pools and swales, the Butte Creek Diversion Channel, and the Steve Harrison Memorial Bike Path. The area surrounding the project site is characterized by urban development, including single and multi-family residences to the north, single-family residences to the west, commercial land to the south, and an industrial use to the southeast. East of the project site is privately owned rangeland and open space that slopes gently up in elevation to rolling foothill terrain.

## Visual Resources

The Figures IV.B-3 through IV.B-6, show key visual resources within the project site and surrounding areas. These include the existing vegetated state, Sierra Nevada foothills and the historic walls along the Steve Harrison Memorial Bike Path. These resources are described in detail below.

### *Existing Vegetation*

The project site include annual grasslands, riparian woodlands, as well as the various vernal pools and swales within the confines of the site. The vegetation on-site is visible from all of the surrounding roadways and residences within the immediate vicinity and blends into the background of the Sierra Nevada foothills, just east of the project site.

### *Historic Walls*

Historic walls comprised of stacked volcanic boulders are located on-site along the Steve Harrison Memorial Bike Path. The walls consist of volcanic boulders that have been stacked to form a low wall. According to the Chico General Plan this is a locally recognized cultural resource that contributes to the visual character of the site.

### *Sierra Nevada Foothills*

The Sierra Nevada foothills characterize the eastern landscape of the City of Chico. The valley floor gradually inclines into the foothills and a series of ridges and buttes form break points in the terrain. The shifts in elevation are significant and the City becomes more visible from the development in areas of increasing topography. The Sierra Nevada foothills are visible looking east from the project site.

## Views of the Project Site

The following discussion is based on an assessment of site visibility conducted by WRA. The photos presented in this discussion include views from vantage points in areas surrounding the project site in which the site is visible, as well as views of other surrounding land uses. The photos included are not meant as an exhaustive collection of all the views that include the project site from all vantage points, but is meant to show representative views toward the site from the surrounding areas.

As shown in Figures IV.B-3 and IV.B-4, views of the project site are available from a variety of surrounding locations, including short-range views from adjacent roadways and land uses, and medium-range views from land uses located further away from the site. The project site is west of the foothills that are elevated enough to provide long-range views of the project site.

In the immediate vicinity of the project site, short-range views of the site are available from East 20<sup>th</sup> Street, Bruce Road, Skyway, Raley Boulevard, Steve G. Harrison Memorial Bike Path, portions of the Raley's parking lot, and single-family residences located north and west of the project site. The views along Bruce Road and Skyway are generally temporary due to the nature of the heavily trafficked roadways. However, these views are long-term for the



residences located along East 20<sup>th</sup> Street and west of Bruce Road (Figure IV.B-1 & Figure IV.B-2).

Due to the variable topography, the project site slopes from the northeast to the southwest. As such, portions of the site are lower than the development to the north and west of the project site. However, the project site does not include an abundance of tall vegetation that would provide screening for the surrounding land uses. The landscape characteristics of the views of the project site consist of slightly sloping vegetated topography, barbed wire fences, and utility poles and lines.

Figure IV.B-1, consists of several views of the project site from various viewpoints. View 1 is a long-range view looking southwest onto the project site. The view illustrates the variable topography and differing uses present, as a gravel trail cuts across the foreground of the photograph, the middle-ground shows vacant vegetated land, and tall trees and development are visible in the background. This view would be available to viewers driving along East 20<sup>th</sup> Street and residents who live in the adjacent homes. Views of the project site from this vantage are largely unobstructed with the exception of vehicles traveling along East 20<sup>th</sup> Street.

Figure IV.B-1, View 2 shows the changing topography on-site as it forms the Butte Creek Diversion Channel. This view can be seen from East 20<sup>th</sup> Street looking south and shows the presence of differing biological communities on-site. Similar to the above, this view would be available to viewers along East 20<sup>th</sup> Street and residents who live in the adjacent homes. Views of the Butte Creek Diversion Channel would be obstructed to viewers traveling west on East 20<sup>th</sup> Street towards Bruce Road due to the change in topography.

Figure IV.B-1, Views 3 and 4 both provide views of the annual grasslands within the project site that can be seen along Skyway. The vacant vegetated views of the project site are prominent from most of the available viewpoints surrounding the project site. View 3 depicts a portion of the site that is completely vegetated, whereas View 4 includes an area of dense vegetation in the foreground, a portion of the rock wall, and a utility pole in the middle-ground, and additional vegetated land in the background. Both of these views would be unobstructed from passers-by along Skyway.

Figure IV.B-2, View 1 is a medium-range view depicting the Butte Creek Diversion Channel from the center of the site looking north. In the foreground the photograph shows the sloping topography of this section of the site and pools of water still present in the channel. The sides of the channel are largely lacking vegetation, in contrast to the majority of the rest of the site.

Figure IV.B-2, View 2 is another medium-range view depicting the expanse of vacant land consisting of vegetated annual grasslands. This view would be unobstructed from vehicles traveling along East 20<sup>th</sup> Street.

Figure IV.B-2, Views 3-4, when viewed together, show a panoramic view of the western expanse of the site. Both views illustrate the paths present within the confines of the project site, along with rock elements west of the Butte Creek Diversion Channel.

Long-range views of the project site are generally limited to locations situated at higher elevations than the project site that do not have intervening obstructions (i.e., homes, buildings, shopping center, trees and landscaping) between these locations and the project site. Such unobstructed and partially obstructed long-range views of the project site are available from the foothills east of the project site.

Views of the surrounding uses within the vicinity of the project site are variable. Residential uses are located to the west and north of the site as evidenced in Figure IV.B-3, View 1, View 4, and Figure IV.B-4, View 1.

Figure IV.B-3, View 1 shows one of residential developments located north of the project site. This area is located along East 20<sup>th</sup> Street. A number of the houses along East 20<sup>th</sup> street have unobstructed views of the existing project site.

Figure IV.B-3, View 4 shows the foreground and middle-ground of the vegetated project site, prior with the homes bordering the site on Roberto Court visible in the background. These homes have a permanent unobstructed view of the project site.

Figure IV.B-4, View 1 depicts residential uses north of the project site.

Figure IV.B-3, View 2 & IV.B-4, View 4, shows commercial development, including grocery stores, abuts the southern edge of the project site. This area is located on the eastern side of Bruce Road, the same side as the project site. The views of the project site in pre-project condition are visible from this adjacent use, however would be partially obstructed views of the site due to the expanse of parking lot, vacant lot, and vehicular traffic along Bruce Road.

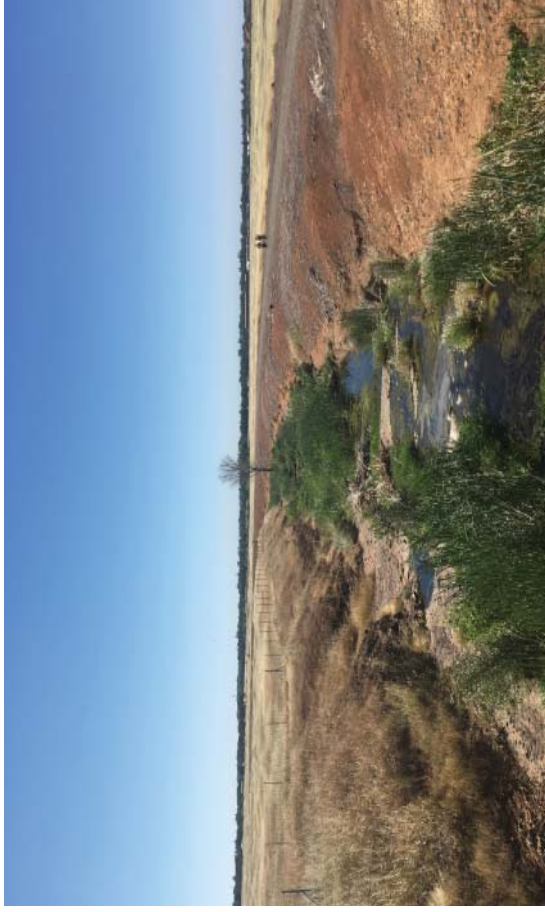
Figure IV.B-1, View 3 is a medium-range view of looking north along Bruce Road from the intersection of Raley Boulevard and Bruce Road. The street and adjacent vacant land is shown in the foreground and the stretch of road continues in the middle-ground. The vehicles in the photograph would pass the proposed project site. Unobstructed views of the project site would be available from this surrounding area.

Figure IV.B-4, View 2 shows the vacant land east of the project site along Skyway. This area of land is immediately east of the project site and consists of similar vegetation and aesthetic qualities. This area is immediately prior to the Sierra Nevada foothills and slowly increases in elevation compared to the project site. This area would have permanent and unobstructed views of the project site.

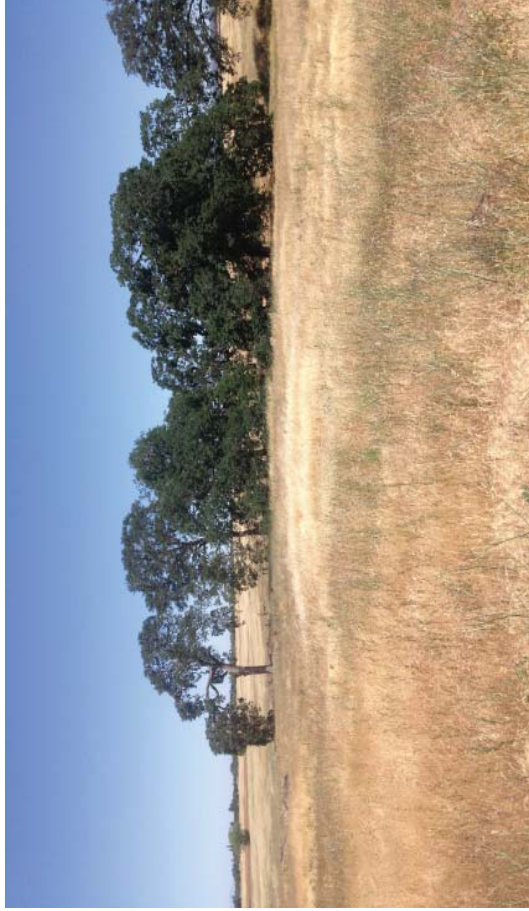
Figure IV.B-4, View 3 shows the area south of the project site where there is an industrial area near the eastern edge of the project boundary. The industrial area is located just east of the southern border of the site, where it would only have a partial view of the project site. Views would also be obstructed from the vehicular traffic along Skyway.



**View 1.** View of the project site looking southwest from E. 20th Street.



**View 2.** View of the project site looking south from E. 20th Street.



**View 3.** View of the project site looking north from Skyway.



**View 4.** View of the project site looking east from Skyway.

**Figure IV.B-1 Views of the Project Site**

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California





**View 1.** View of the project site looking north along the Butte Creek Diversion Channel.



**View 2.** View of the project site looking east from E. 20th Street.



**View 3.** View of the project site looking south from the gravel road adjacent to the Butte Creek Diversion Channel.



**View 4.** View of the project site looking west from the Butte Creek Diversion Channel.

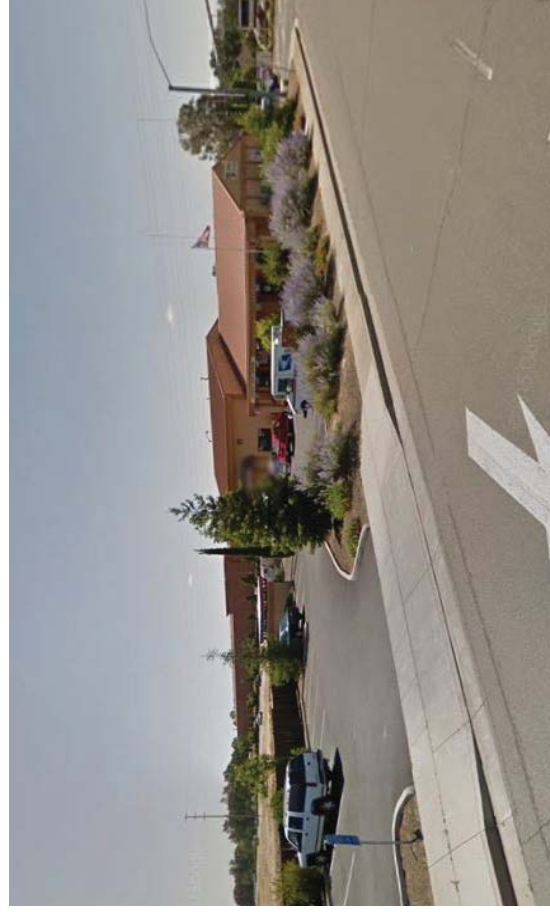
Figure IV.B-2 Views of the Project Site

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

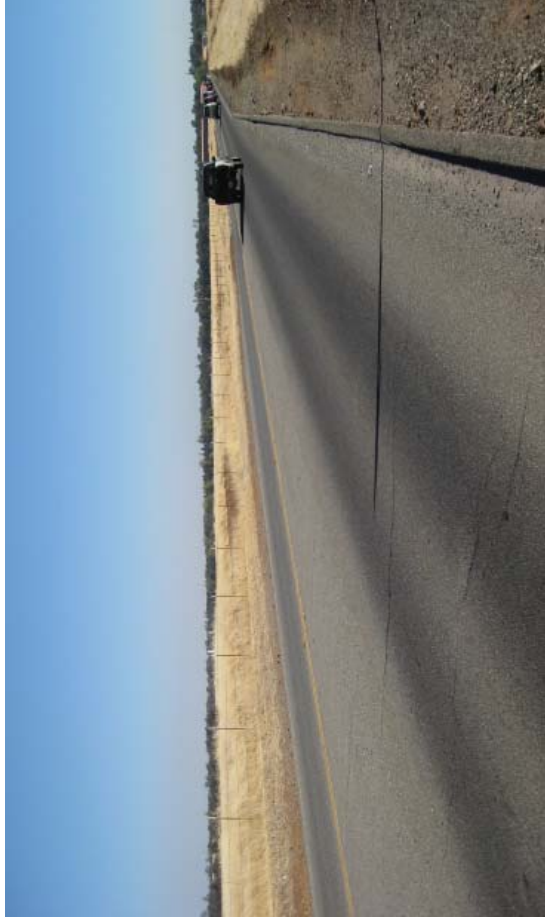




**View 1.** View looking north from the project site towards the homes along E 20th Street.



**View 2.** View looking east from Bruce Road of commercial development abutting the southern end of the project site.



**View 3.** View looking north from of the intersection of Raley Boulevard and Bruce Road.



**View 4.** View looking west from the project site towards homes on Roberto Court.

Figure IV.B-3 Views of Surrounding Land Uses

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

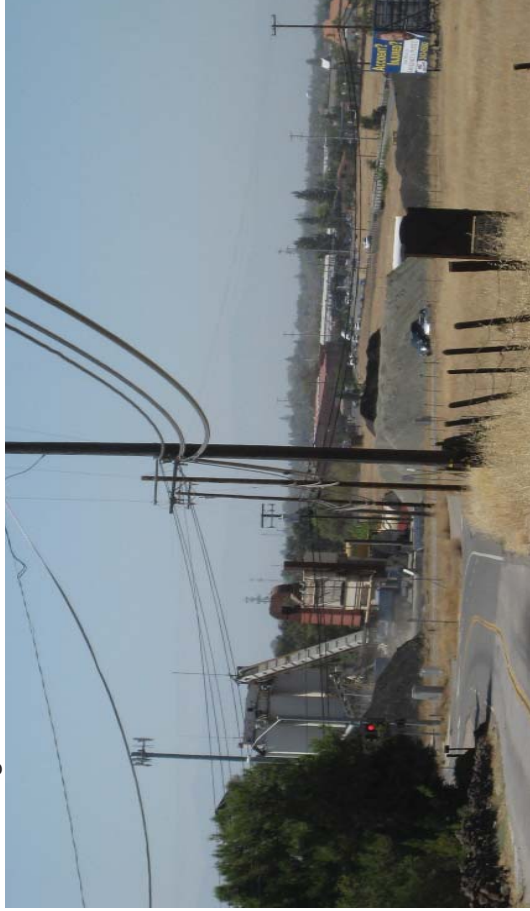




**View 1.** View from the project site looking north towards a residential neighborhood.



**View 2.** View of vacant land east of the project site from Skyway.



**View 3.** View looking southeast from the southern border of the project site towards the industrial use.



**View 4.** View of commercial uses south of the project site.

Figure IV.B-4 Views of Surrounding Land Uses

Stonegate Vesting Tentative Subdivision Map and General Plan Amendment/Rezone  
City of Chico, California

**Light and Glare**

There are currently no sources of light on the project site. Daytime sources of glare in the vicinity of the site include reflections off of light-colored surfaces, windows, and metal details on cars traveling on E. 20<sup>th</sup> Street, Bruce Road, or Skyway. Light sources in the vicinity of the site include streetlights along E. 20<sup>th</sup> Street and Skyway, headlights of cars traveling nearby, and outdoor and indoor lighting from the adjacent residential and commercial land uses.

**Scenic Roadways**

The Community Design Element of the General Plan identifies Vallombrosa Avenue, E. 8<sup>th</sup> Street, the Esplanade, Chico Canyon Road, Centennial Avenue, Manzanita Avenue, Humboldt Road, and Bidwell Avenue as scenic roadways. The proposed project does not contain nor is it adjacent to any of these scenic roadways.

**Sierra Nevada Foothills**

The Land Use and Community Design Elements of the City of Chico General Plan contain policies aimed at maintaining boundaries between urban uses and the foothills in order to protect viewsheds and allow for a compact urban form. Foothill development standards are included in the Chico Municipal Code and apply to areas generally east of Yosemite Drive, and east of Bruce Road at elevations of 270 feet and above. The proposed project site is not within this designated area.

## REGULATORY SETTING

### Federal

Currently no Federal policies and/or mandates related to aesthetic resources exist.

### State

#### *State Scenic Highway Program*

The California Scenic Highway Program was established in 1963 in order to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to state highways. The state regulations and guidance governing the Program can be found in the Streets and Highways Code, Section 260 et seq. A highway may be designated as “scenic” depending on 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. A scenic corridor is defined as land generally adjacent to and visible from the highway and can be identified using a motorist’s line of vision. A reasonable boundary is selected when the view extends to the distant horizon. There are no state scenic highways in or adjacent to the project site.

#### *Nighttime Sky – Title 24 Outdoor Lighting Standards*

The California legislature passed a bill in 2001 requiring the California Energy Commission (CEC) to adopt energy efficient standards for outdoor lighting for both the public and private sector. In November 2003, CEC adopted changes to the Title 24, parts 1 and n6, Building Energy Efficiency Standards. These standards are effective as of October 1, 2005 and include changes to the requirements for outdoor lighting and help to reduce the impacts related to 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. Different lighting standards are set by classifying areas by lighting zone. The classification is based on population figures of the 2000 Census. Areas can be designated as LZ1 (dark), LZ2 (rural), or LZ3 (urban).

### Local

#### *City of Chico Municipal Code (CMC)*

#### Chapter 19.18 – Site Design and Architectural Review

Chapter 19.18 of the Municipal Code requires a discretionary design review process for all new commercial and multi-family residential development in the City, intended to promote a visual environment of high aesthetic quality. The Chico Architectural Review and Historic Preservation Board promotes responsible architectural design, which is consistent with Chico’s character by applying adopted design guidelines. 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. The City’s Design Guidelines Manual contains graphic examples and explanations of



architectural and site design elements that reflect the most desirable types of development within the City.

#### Section 19.60.050 – Exterior Lighting

Section 19.60.050 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 shall be directed downward and away from adjacent properties and public rights-of-way. Shielded shall mean that the light rays are directed onto the site, and the light source, whether bulb or tube, is not visible from an adjacent property. This section does not apply to sign illumination, traffic safety lighting, or public street lighting. No permanently installed lighting shall blink, flash, or be unusually high intensity or brightness. All lighting fixtures shall be appropriate in scale, intensity, and height to the use they are serving.”*

#### *City of Chico General Plan*

#### Land Use Element

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

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

Action LU-2.5.1 (Resource Constraint Overlay) – For development proposals on properties with the Resource Constraint Overlay, which highlights known sensitive resource areas, land owners must conduct detailed environmental studies, adhere to CEQA requirements, and coordinate with resource agencies to determine actual development potential. Development proposals for a density or intensity of use above that assumed for the purposes of the General Plan projections and the General Plan EIR will need to address impacts not evaluated as part of the General Plan.

Policy LU-3.4 (Neighborhood Enhancement) – Strengthen the character of existing residential neighborhoods and districts.

Policy LU-4.2 (Infill Compatibility) – Support infill development, redevelopment, and rehabilitation projects that are compatible with surrounding properties and neighborhoods.

Policy LU-4.4 (Positive Contributions) – Encourage infill development that provides missing neighborhood elements, such as neighborhood retail, enhanced architectural quality, and circulation improvements for pedestrians, bicycles, and vehicles, or that otherwise contributes positively to existing neighborhoods.

#### Community Design Element

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.

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.

Policy CD-5.1 (Compatible Infill Development) – Ensure that new development and redevelopment reinforces the desirable elements of its neighborhood including architectural scale, style, and setback patterns.

Policy CD-5.2 (Context Sensitive Transitions) – Encourage context sensitive transitions in architectural scale and character between new and existing residential development.

#### Parks, Public Facilities, and Service Element

Policy PPFS-2.1 (Use of Creeks and Greenways) – Utilize the City's creeks, greenways, and other open space 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.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on the CEQA Standards of Significance, the project would generally be considered to have a significant impact on the environment if it would:

- (a) Have a substantial adverse effect on a scenic vista;
- (b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a scenic highway;
- (c) Significantly degrade the existing visual character or quality of the site and its surroundings; or
- (d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

### Aesthetics Issues not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.B of this Draft EIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, or historic buildings within a scenic highway.

### Project Impacts and Mitigation Measures

*Impact IV.B-1: The proposed project would have a substantial adverse effect on a scenic vista.*

The proposed project would result in a significant aesthetics impact if it would have a substantial adverse effect on a scenic vista. According to the Chico General Plan Update Draft Environmental Impact Report, 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, the major creeks, Bidwell Park, and views of City neighborhoods. The project site is adjacent to private land that provides views of the Sierra Nevada foothills. Given the natural topography of the project site and surrounding land uses, public views of the surrounding foothills are limited to the roadways (including Bruce Rd, East 20<sup>th</sup> St, Raley Blvd, Webster Dr, Parkhurst St. and the Skyway) in proximity to the site.

Computer-generated visual massing Figures IV.B-5 through IV.B-7 illustrate existing and potential future conditions within select view corridors from representative public vantage points. The locations of the massing studies were selected in consultation with city staff. Digitized photographs and computer modeling techniques were utilized to prepare the massing diagrams. The images show “wire frame” illustrations, which are based on height and bulk allowed under the proposed zoning designations. The images do not show architectural detail, as specific architectural plans are not part of this review. Impacts from the various public view points are further discussed in Table IV.B-1 of this Draft EIR.

**Figure IV.B-5A: Existing Conditions from Skyway Looking West**



**Figure IV.B-5B: Proposed Development from Skyway Looking West**



**Figure IV.B-6A: Existing Conditions from Bruce Road & East 20<sup>th</sup> Looking Southeast**



**Figure IV.B-6B: Proposed Development from Bruce Road & East 20<sup>th</sup> Looking Southeast**

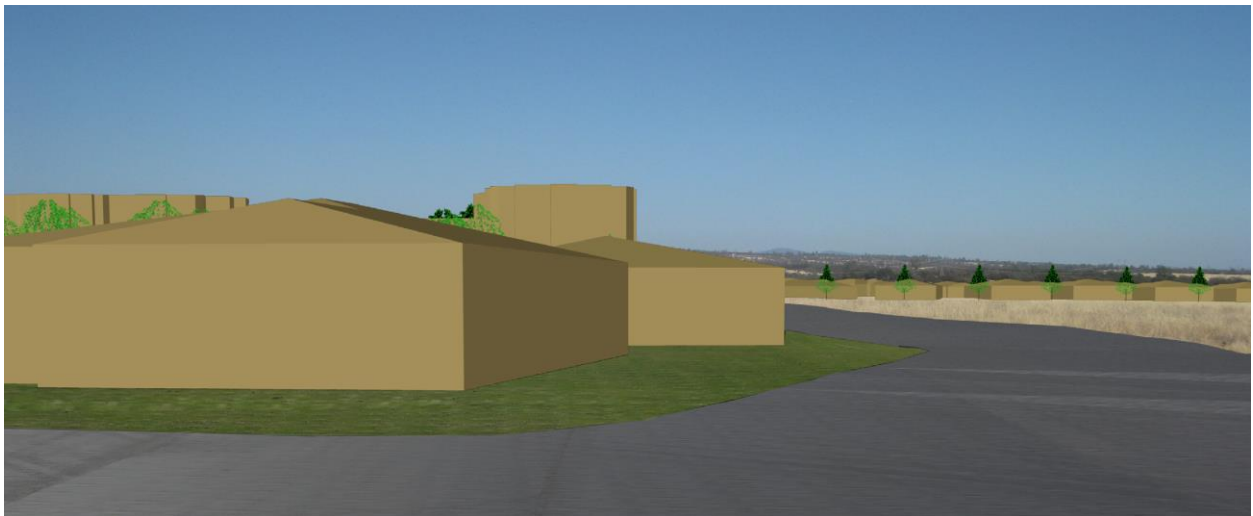




**Figure IV.B-7B: Existing Conditions from Webster Drive Looking West**



**Figure IV.B-7B: Proposed Development from Webster Drive Looking West**



**Table IV.B-1  
Impacts to Public Viewpoints of the Sierra Foothills**

<b>View Area</b>	<b>Impact</b>
Bruce Road	Views from Bruce Road are confined to motorist and bicyclist utilizing the road. The roadway travels North/South, opposite of the sightline that will be blocked by proposed project activities. There are no sidewalks for pedestrians to utilize along Bruce Road.
East 20 <sup>th</sup> Street	Limited portions of views of the eastern foothills will be blocked by the proposed project. The proposed project would block southeasterly views along East 20 <sup>th</sup> Street between Bruce Road and the Butte Creek Diversion Channel.
Parkhurst Street	The views from Parkhurst Street are confined to a small vantage point at the eastern terminus of the road. The project would likely block all views of the eastern foothills from this view point.
Laredo Lane	The views from Laredo Lane are confined to a small vantage point at the eastern terminus of the road. The project would likely block all views of the eastern foothills from this view point.
Webster Drive	The views from Webster Drive are confined to a small vantage point at the eastern terminus of the road. The project would likely block some views of the eastern foothills from this view point.
Fremont Street	The views from Fremont Street are confined to a small vantage point at the eastern terminus of the road. The project would not substantially block views of the eastern foothills at this location, however, views from Fremont Street may be blocked by construction of the Canyon View High School in the future.
Raley Boulevard	The views from Raley Blvd. of the foothills to the East would largely be blocked by future development of the proposed project.
Skyway	Limited portions of the view of the eastern foothills will be blocked by the proposed project. The proposed project would block some views along Skyway between Bruce Road and Potter Road.
Potter Road	The view from Potter Road of the currently undeveloped project site would be blocked for the entirety of the road, approximately 200 feet, by the RS-20 lots. Potter Road turns into a bicycle and pedestrian path after its initial 200 feet of roadway. Views from the bicycle and pedestrian path provide intermittent views of the project site. Views of the site would be altered from undeveloped grasslands to that of modern development. In addition, the commercial portions of the project would block existing views of residential development to the west of the site.

Visual impacts to public view points in the surrounding area are confined to roadways and sidewalks. The proposed project would primarily impact smaller local roads with limited existing views of the easterly sierra foothills. Views from the Potter Road pedestrian path would largely



maintain the same visual context. The views would have undeveloped grasslands and vernal pools in the foreground, while having modern development in the background. Construction of the Canyon View High School would further reduce the number of viewpoints of the sierra foothills in the project's vicinity. Given the limited number of public viewpoints, limited view at viewpoints and lack of pedestrian access to viewpoints the proposed project would have a ***less than significant*** impact to scenic vistas and no mitigation measures are required.

*Impact IV.B-2: The proposed project would significantly degrade the existing visual character or quality of the site and its surroundings.*

The proposed project would result in a significant aesthetics impact if it would significantly degrade the existing visual character or quality of the site and its surroundings. As discussed previously, the visual character of the project site is vacant, undeveloped land containing vernal pools, and non-native annual grasses. Sparse oak trees are located in the southeastern portion of the site and some riparian woodland tree species exist within the south-central portion along the Butte Creek Diversion Channel. The Butte Creek Diversion Channel runs in a north-south direction through the eastern portion of the site, about midway between Bruce Road and old Potter Road (now the Steve Harrison Memorial Bike Path). Along portions of the bike path are historic walls comprised of stacked volcanic boulders. The visual character of the site can generally be described as vacant land. The primary character-defining features on the project site are its existing vegetation (non-native grasslands and riparian woodlands), vernal pools and swales, the Butte Creek Diversion Channel, and the Steve Harrison Memorial Bike Path.

The area surrounding the project site is characterized by urban development, including single and multi-family residences to the north, single-family residences to the west, commercial land to the south, and an industrial use to the southeast. East of the project site is privately owned rangeland and open space that gently slopes up in elevation to rolling foothill terrain. These uphill lands to the east comprise the Doe Mill/Honey Run Special Planning Area (SPA), identified in the Chico 2030 General Plan as a 1,400-acre growth area for the city.

The proposed project would preserve 108 acres, approximately 33 percent of the project site, as open space. The open space would include grassland habitat intermixed with a variety of seasonal wetlands, vernal pools known to support high concentrations of BCM, natural drainages, and the Butte Creek Diversion Channel. The proposed open space would be located immediately south of the City's Doe Mill Preserve, a 15-acre BCM preserve. Views of the foothills would be available from a street, public park, and a pedestrian/bike path planned along the western boundary of the open space. There would be no substantial change to existing visual resources from the implementation of the open space element of the proposed project.

Development resulting from the proposed project would substantially affect all of the primary character-defining features of the site located outside of the open space preserve. Although the project would preserve a significant portion of the project site as open space areas, much of these natural character-defining features of the project site would be obscured from view by the proposed houses, commercial development, and landscaping, shown in Figures IV.B-5 through IV.B-7. Therefore, the project would change the visual character of the site from that of vacant

land containing vernal pools and non-native annual grasses to that of modern development, containing housing and commercial uses. Because all of the primary character-defining features of the site would be significantly altered, the project would substantially change the visual character of the site.

Implementation of the proposed project would result in the development of residential and commercial land uses on the project site that are similar to the land uses found adjacent to and in the vicinity of the site to the north, west, and south. The massing, height, and architectural-style of the proposed homes and the associated landscaping would be similar to that found in the subdivisions adjacent to and near the project site to the north, west, and south. As stated above, future development of commercial and multi-family residential lots would be required to comply with the City's visual quality policies via the site design and architectural review process, which would ensure that these components are designed and constructed to be compatible with surrounding neighborhoods. Although development would significantly alter the visual character of the area, the alteration would not constitute a substantial degradation in relationship to the off-site land uses to the north, west, and south. The proposed project would constitute infill development of an expanding area of the City of Chico. Therefore, impacts would be **less than significant** and no mitigation measures are required.

*Impact IV.B-3: The proposed project would create a new source of light or glare which would adversely affect day or nighttime views in the area.*

A significant impact would occur if the proposed project were to introduce new sources of light or glare on or from the project site which would be incompatible with the area surrounding the project site, or which pose a safety hazard to motorists utilizing adjacent streets. The project site is located in an urbanized area characterized by a variety of land uses. Daytime sources of light and glare in the vicinity of the site include reflections off of car windows, mirrors, metal details, or surfaces of cars traveling along Skyway, Bruce Road, and East 20<sup>th</sup> Street or reflections from or light colored surfaces, or windows on surrounding residences and commercial uses. Light sources in the vicinity of the site include street lights along East 20<sup>th</sup> Street, lights associated with the residential uses along the northern and western borders of the site, and lighting associated with the commercial area near the southern edge of the project site.

Implementation of the proposed project would introduce new sources of light and glare to the site, including interior and exterior building lighting, vehicle headlights, parking lot lights on commercial and multi-family residential lots, and reflective surfaces such as windows and light-colored trim on a site that is currently vacant. Although the additional light and glare sources added to the project site as a result of the proposed project would be noticeable to some viewers in the surrounding area, it would not be substantial enough to significantly impact day or nighttime views in the area. All exterior lighting associated with specific development proposals on commercial and multi-family residential lots would be reviewed for compliance with CMC 19.60.050, by the City planning staff and the City's Architectural Review and Historic Preservation Board. Exterior lighting associated with single-family residences is typically low-level or recessed, of low intensity, and must also comply with CMC 19.60.050. Overall, light and glare impacts would be **less than significant** and no mitigation measures are required.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Aesthetics impacts associated with the proposed project would be ***less than significant***.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### C. AIR QUALITY

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#### INTRODUCTION

This section describes the expected emissions of air pollutants generated during the construction and operational phases of the proposed project and has been prepared in accordance with the most recent version of the Butte County Air Quality Management District (BCAQMD) CEQA Guidelines.<sup>1</sup> In addition, the potential construction health risk impacts to nearby sensitive receptors were evaluated.

#### ENVIRONMENTAL SETTING

The project is located in Butte County, which is in the Northern Sacramento Valley Air Basin. Ambient air quality standards have been established at both the State and federal level. Butte County meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>).

##### Criteria Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of Butte County's attempts to reduce ozone levels. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM<sub>10</sub>) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM<sub>2.5</sub>). Elevated concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

##### Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter

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<sup>1</sup> BCAQMD, 2014. CEQA Air Quality Handbook. October 23.

[DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in Butte County. According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

### **Sensitive Receptors**

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site include residences adjacent to the west and across E. 20<sup>th</sup> Street to the north. There are additional residences further to the south of the project site.

## REGULATORY SETTING

### Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the Federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO<sub>x</sub>, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO<sub>x</sub> emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.<sup>2</sup>

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD) is currently required for use by all vehicles in the U.S.

All of the above Federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

### State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.<sup>3</sup> In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine

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<sup>2</sup> USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December 2000.

<sup>3</sup> California Air Resources Board. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000.

emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and PM<sub>2.5</sub> emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO<sub>x</sub> emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO<sub>x</sub> exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO<sub>x</sub>.

### **Regional Regulations**

BCAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment. The BCAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BCAQMD *CEQA Air Quality Handbook*<sup>4</sup> was prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the County. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions.

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<sup>4</sup> Butte County Air Quality Management District, 2014. *CEQA Air Quality Handbook*. October.

## Local Regulations

The City of Chico General Plan<sup>5</sup> contains the following goals, policies and actions applicable to the proposed project:

### **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-4.1.2 (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 Butte County Air Quality Management District's CEQA Air Quality Handbook.

Action OS-4.1.3 (Wood Burning) – Implement measures to reduce air pollution from wood burning.

Action OS-4.1.6 (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.

### **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.

### **Goal SUS-5: Increase energy efficiency and reduce non-renewable energy resource consumption citywide.**

### **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 the California Environmental Quality Act.

Policy SUS-6.4 (Community Trees) – Continue to support the planting and maintenance of trees in the community to increase carbon sequestration.

### **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.

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<sup>5</sup> City of Chico. Chico 2030 General Plan. Amended March 2017.



## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

In accordance with Appendix G of Title 14, Chapter 3 of the California Code of Regulations (CCR's): The 2012 CEQA Guidelines, the proposed project would have a significant environmental impact if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- c) 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);
- d) Expose sensitive receptors to substantial pollutant concentrations; or
- e) Create objectionable odors affecting a substantial number of people.

In 2014, 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 believed 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 IV.C-1.

The Bay Area Air Quality Management District's (BAAQMD) adoption of significance thresholds contained in their 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as “CEQA-in-reverse” – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. Therefore, the effect of existing TAC sources on future project receptors (residents) is not considered a CEQA issue and is not analyzed further.

**Table IV.C-1: Air Quality Significance Thresholds**

<b>Criteria Air Pollutant</b>	<b>Construction Thresholds</b>		<b>Operational Thresholds</b>
	<b>Maximum Daily Emissions (lbs./day)</b>	<b>Annual Average Emissions (tons/year)</b>	<b>Maximum Daily Emissions (lbs./day)</b>
ROG	137	4.5	25
NO <sub>x</sub>	137	4.5	25
PM <sub>10</sub>	80	--	80
Notes: ROG = reactive organic gases, NO <sub>x</sub> = nitrogen oxides, and PM <sub>10</sub> = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less.			

While BCAQMD has no adopted threshold for community risk impacts, the following thresholds are recommended by BCAQMD:

- An excess cancer risk level of more than 10.0 in 1 million, or a non-cancer (chronic or acute) hazard index greater than 1.0.
- An incremental increase of more than 0.3 micrograms per cubic meter (µg/m<sup>3</sup>) annual average PM<sub>2.5</sub>.

#### **Air Quality Issues not Further Analyzed**

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft EIR, and were determined to result in a less-than-significant impact and not warrant further analysis:

- Create objectionable odors affecting a substantial number of people.

#### **Project Impacts and Mitigation Measures**

##### *Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?*

On September 26, 2017, BCAQMD submitted the Chico, CA/Butte County PM<sub>2.5</sub> Nonattainment Area Redesignation Request and Maintenance Plan. The document demonstrates how the Planning Area meets requirements to request redesignation to attainment for the 2006 24-hour PM<sub>2.5</sub> NAAQS and how the Planning Area will maintain the NAAQS through the next 10 years. The current applicable air quality plan for the BCAQMD is the Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Plan (Sacramento Valley Air Quality Engineering and Enforcement Professionals, 2015). A project would be judged to conflict with or obstruct implementation of the regional air quality plan if it would result in or induce unplanned growth in population, employment, land use, or regional vehicle miles traveled (VMT) that is inconsistent with the growth (and therefore the emissions projections) assumptions in the applicable attainment plan. As detailed in this EIR under Population and Housing (chapter IV.L), Utilities

and Service Systems (chapter IV.P) and Cumulative Effects (Chapter V), the proposed zoning changes and anticipated future development from this project is within the scope of planned growth for Chico that leading up to the 2030 planning horizon. Therefore, the proposed project would not exceed the growth forecasts utilized in the 2015 Air Quality Plan and this impact is considered ***less than significant***.

*Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction and operation of the site assuming full build out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod.

### **Construction Period Emissions**

CalEEMod provided annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario, including equipment list and schedule, was based on CalEEMod defaults for a project of this type and size. The proposed project land uses were input into CalEEMod, which included: 469 dwelling units entered as “Single Family Housing,” 233 dwelling units entered as “Apartments Low Rise,” 205,000 square feet (sf) entered as “Medical Office Building”/commercial, and 240,000 sf entered as “Strip Mall”/retail. The CalEEMod input and output values are contained in Appendix C.

Table IV.C-2 shows maximum annual and daily construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub> during construction of the project. As indicated in Table IV.C-2, predicted construction period emissions would exceed the BCAQMD significance threshold for ROG and NO<sub>x</sub> emissions and would be considered ***significant***. *Mitigation Measures AIR-2A and AIR-2B* would reduce this impact to a level of ***less than significant***.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM<sub>10</sub>. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. *Mitigation Measure AIR-2A* would implement BCAQMD-recommended best management practices.

**Table IV.C-2: Construction Period Emissions**

<b>Scenario</b>	<b>ROG</b>	<b>NOx</b>	<b>PM<sub>10</sub></b>
<b>Unmitigated - Annual</b>			
Maximum Year Total (tons)	10.5 tons	6.5 tons	1.9 tons
BCAQMD Thresholds (tons per year)	4.5 tons	4.5 tons	--
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Mitigated - Annual</b>			
Mitigated Maximum Year Total (tons)	3.5 tons	4.2 tons	0.8 tons
BCAQMD Thresholds (tons per year)	4.5 tons	4.5 tons	--
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Unmitigated – Daily</b>			
Maximum Daily (pounds)	80.3 lbs.	50.3 lbs.	20.6 lbs.
BCAQMD Thresholds (pounds per day)	137 lbs.	137 lbs.	80 lbs.
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>

### Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future residents and employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to predict emissions from operation of the proposed project assuming full build-out.

#### Land Uses

The project land uses were input to CalEEMod, as described above.

#### Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest year estimated for full project build-out and operation is 2035.

#### Trip Generation Rates

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project traffic report. This included the trip reductions for mixed-use internal trips, shift to alternate modes of transportation (i.e., walk,

bike and transit), and retail pass-by. The CalEEMod default trip lengths were modified based on ACS Census data and information provided by the Butte County Association of Governments (BCAG).<sup>6</sup> The CalEEMod defaults for fleet mix were adjusted based on data from multiple traffic counts collected by the Chico Public Works Department.

### *Energy*

CalEEMod defaults for energy use were used, which are assumed to include 2016 Title 24 Building Standards. One adjustment was made to CalEEMod default rate of 641.3 pounds of CO<sub>2</sub> per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The rate was adjusted to account for PG&E's projected 2020 CO<sub>2</sub> intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 290 pounds of CO<sub>2</sub> per megawatt of electricity delivered.<sup>7</sup>

### *Other Inputs*

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. No new wood-burning stoves or fireplaces are allowed in Butte County, but it was assumed that 25 percent of new single-family residences could include gas-powered fireplaces. The consumer products emission factor was updated to reflect the latest emission information from CARB.<sup>8</sup> The landfill capture rate was updated to 90 percent based on correspondence with Bill Mannel, Solid Waste Manager for Butte County.<sup>9</sup> Based on correspondence with Jason Mandly, Planner at BCAQMD, the interior and exterior architectural coatings factor was updated to 150 g/L.<sup>10</sup>

### Total Project Operational Emissions

Table IV.C-3 reports the predicted emissions in terms of maximum daily operational emissions in the model year (2035). As shown in Table IV.C-3, maximum daily emissions of ROG, NO<sub>x</sub> and PM<sub>10</sub> associated with operation would exceed the BCAQMD significance thresholds under both unmitigated and mitigated modeling estimates. Since the CalEEMod inputs for trip generation rates reflect the net number of predicted trips from the traffic study (i.e. trip rates after reductions were applied based on the project's location, configuration and mix of uses), no additional mobile emissions reductions were applied through CalEEMod.

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<sup>6</sup> Available online: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed: March 12, 2018.

<sup>7</sup> Pacific Gas & Electric, 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. November.

<sup>8</sup> CARB, 2013. The California Almanac of Emissions and Air Quality.

<sup>9</sup> Personal correspondence with Bill Mannel, Solid Waste Manager, Butte County.

<sup>10</sup> Personal correspondence with Jason Mandly, Associate Planner, BCAQMD.

**Table IV.C-3: Operational Emissions**

<b>Scenario</b>	<b>ROG</b>	<b>NOx</b>	<b>PM<sub>10</sub></b>
<b>Unmitigated - Daily</b>			
Maximum Daily Emissions (pounds)	60.9 lbs.	60.0 lbs.	86.3 lbs.
<i>BCAQMD Thresholds (pounds/day)</i>	25 lbs.	25 lbs.	80 lbs.
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Mitigated - Daily</b>			
Mitigated Maximum Daily Emissions (pounds)	60.9 lbs.	60.0 lbs.	86.3 lbs.
<i>BCAQMD Thresholds (pounds/day)</i>	25 lbs.	25 lbs.	80 lbs.
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

There are several limitations on accurately predicting future air emissions from the proposed project for the model year (2035). These limitations mainly include, but are not limited to the following:

- The assumptions made for the future development of the multi-family and commercial lots within the project. As explained in the Project Description (Chapter III), conservative assumptions were made for the purposes of this analysis, however actual emissions rates for uses on these lots cannot be accurately predicted until the uses and specific site design proposals become known.
- Regulatory changes that will likely be enacted over the next decade to meet state-mandated 2030 goals for greenhouse gas emissions reductions.
- The unknown degree to which emergent technologies (such as automation of vehicles and service jobs, electric vehicles, 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 2016 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 time.

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 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 NO<sub>x</sub>)

which exceed the BCAQMD's thresholds of significance. Calculation of the payment is based on the Carl Moyer Program's most recent cost effectiveness level per ton, which as of 2017 was \$18,260 per ton and can be found at <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

The BCAQMD CEQA Handbook states that the payment amount shall be calculated at the time of recordation of the final map for residential projects or occupancy of commercial projects, and shall be calculated using CalEEMod or an equivalent tool approved by BCAQMD that includes emission reductions from all project design features and mitigation. Project emissions above the pound per day threshold are converted to tons per year and then divided by the daily-to-annual equity ratio of 5.5 to obtain an equivalent tons per year value. The excess tons per year emissions are then multiplied by 25 years (to represent the project life span) and the most current cost-effectiveness level per ton from the Carl Moyer Program. BCAQMD staff has clarified that although it is not reflected in the 2014 CEQA Handbook, it is the BCAQMD's practice to use a 180 day ozone season when calculating the emissions that are required to be reduced for ozone precursors. In the calculations, this would replace 365 days with 180 days.

Based on the current calculations (35.9 pounds ROG + 35 pounds NO<sub>x</sub> + 6.3 pounds PM<sub>10</sub> = 77.2 pounds/day x 180/2,000 = 6.95 tons/year/5.5 = 1.16 x 25 x \$18,260 = \$576,684), this would result in a payment of \$576,684.00 to the Off-site Mitigation Program, which would be utilized by the BCAQMD for a variety of emission reduction programs located throughout the Air District. *Mitigation Measure AIR-2C/GHG-1* requires the project applicant to participate in an Off-site Mitigation Program in order to reduce ROG and NO<sub>x</sub> operational emissions to less than significant levels, consistent with the BCAQMD's CEQA Handbook and current practices. Therefore, with implementation of *Mitigation Measure AIR-2C/GHG-1*, the operational criteria pollutant emissions would be reduced to a level of less than significant.

*Mitigation Measure AIR-2A: Include basic measures to control dust and exhaust during construction.*

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. The contractor shall implement the following best management practices:

1. Reduce the amount of the disturbed area where possible;
2. 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;
3. All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used;
4. 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;
5. 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;
6. All disturbed soil areas non-subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District;
7. 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;
8. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of fretboard (minimum vertical distances between top of load and top of trailer) in accordance with local regulations;
10. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;
11. 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; and
12. 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.



*Mitigation Measure AIR-2B:*

1. All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days or 20 hours shall meet, at a minimum, U.S. EPA NO<sub>x</sub> emissions standards for Tier 4 engines or equivalent.
2. The project sponsor shall require all architectural coatings during construction containing 50 g/L or less.

*Mitigation Measure AIR-2C/GHG-1: The project applicant shall implement the following BCAQMD-recommended operational mitigation measures:*

1. Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools;
2. Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles;
3. Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible;
4. Final designs shall consider buildings that include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design);
5. Utilize high efficiency gas or solar water heaters;
6. Utilize built-in energy efficient appliances (i.e., Energy Star);
7. Utilize double-paned windows;
8. Utilize low energy street lights (i.e. light-emitting diode);
9. Utilize energy-efficient interior lighting;
10. Utilize low-energy traffic signals (i.e., light-emitting diode);
11. The project shall meet all title 24 requirements, including but not limited to;
  - a. Install door sweeps and weather stripping (if more efficient doors and windows are not available);
  - b. Install energy-reducing programmable thermostats;
  - c.

Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs;  
; and

12. Prior to the recordation of each Final Map, to the extent that cumulative project operational emissions exceed applicable thresholds the project applicant shall participate in an Off-site Mitigation Program coordinated through the Butte County Air Quality Management District (BCAQMD). The project applicant shall utilize a methodology based on the BCAQMD CEQA Handbook with final details to be approved by the BCAQMD and City for calculating the payment to the Off-site Mitigation Program.

*Impact AIR-3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

As discussed above, the project would have operational emissions above the ROG and NO<sub>x</sub> significance thresholds adopted by BCAQMD. *Mitigation Measures AIR-2A and AIR-2B* would reduce ROG and NO<sub>x</sub> construction impacts and *Mitigation Measure AIR-2C/GHG-1* would reduce ROG and NO<sub>x</sub> operational impacts to below BCAQMD significance thresholds and, therefore, to a level of **less than significant**. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards). As a result, the region has been designated as attainment for the carbon monoxide standard.

*Impact AIR-4: Expose sensitive receptors to substantial pollutant concentrations?*

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of respirable particulate matter. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. *Mitigation Measure AIR-2a* would implement BCAQMD-required best management practices.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. Construction exhaust emissions may still pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM<sub>2.5</sub>. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. The closest sensitive receptors to the project site include residences adjacent to the west and across E. 20<sup>th</sup> Street to the north. There are additional residences further to the south of the project site. The size and magnitude of future construction activities in close proximity to nearby sensitive receptors would result in a potentially **significant** impact with respect to community risk. Implementation of *Mitigation Measure AIR-4* would require the use of Best Available Control Technology, as recommended by BCAQMD, and would reduce this impact to a level of **less than significant**.

*Mitigation Measure AIR-4: Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.*

1. All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days or 20 hours shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent. The construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of equipment that includes CARB-certified Level 3 Diesel Particulate Filters<sup>11</sup> or

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<sup>11</sup> See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

- alternatively-fueled equipment (i.e., non-diesel) could meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant;
2. Implementing a design measure to minimize emissions from on- and off-road equipment associated with the construction phase. This measure should include but not be limited to the following elements:
    - a. Tabulation of on- and off-road construction equipment (type, age, horsepower, engine model year and miles and/or hours of operation);
    - b. Schedule equipment to minimize the amount of large construction equipment operating simultaneously during any given time period;
    - c. Locate staging areas at least 1,000 feet away from sensitive receptors;
    - d. Where feasible, limit the amount of cut and fill to 2,000 cubic yards per day;
    - e. Where feasible, limit the length of the construction work-day period; and
    - f. Where feasible, phase construction activities;
  3. Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
  4. Proposed truck routes should be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors in a truck route map; and
  5. Trucks and vehicles should be kept with the engine off when not in use, to reduce vehicle emissions. Signs shall be placed in queuing areas to remind drivers to limit idling to no longer than 5 minutes.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

*Mitigation Measure AIR-2A* would implement BCAQMD-recommended best management practices. *Mitigation Measures AIR-2A and AIR-2B* would reduce ROG and NO<sub>x</sub> construction impacts to below BCAQMD significance thresholds and, therefore, to a level of **less than significant**.

Implementation of *Mitigation Measure AIR-2C* would reduce the ROG and NO<sub>x</sub> (ozone precursor) operational impacts to a level a level of **less than significant**.

Implementation of *Mitigation Measure AIR-4* would require the use of Best Available Control Technology, as recommended by BCAQMD, and would reduce exposure of sensitive receptors to substantial pollutant concentrations to a level of **less than significant**.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### D. BIOLOGICAL RESOURCES

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#### INTRODUCTION

This section of the Draft EIR addresses biological resource issues related to implementation of the proposed Stonegate Subdivision/General Plan Amendment/Rezone Project (“proposed project”). The information presented in this section is based on the following technical reports prepared by WRA, Inc. (“WRA”) and Foothill Associates (“Foothill”). The reports are based on site surveys conducted by WRA on April 23 and 24, May 17 and 18, and July 12, 2016, and March 26 and 27, 2018; and by Foothill on February 15 and 23, March 3, 17, 18, and 30, April 30, and May 3, 2016 and March 28 and April 21, 2017. These reports are included in Appendix D of this Draft EIR.

- Biological Resources Assessment: Stonegate Subdivision. City of Chico, Butte County. Prepared by WRA. July 2017. (Appendix D-1)
- Rare Plant Survey Report: Stonegate Subdivision. City of Chico, Butte County. Prepared by WRA. June 2016 (Updated March 2018). (Appendix D-2)
- Aquatic Resources Delineation Report Stonegate Property. Prepared by Foothill Associates. Revised May 2017. (Appendix D-3)

#### ENVIRONMENTAL SETTING

The Study Area analyzed for the biological reports includes the project site as well as the north and west addenda areas, consisting of approximately 317 acres located east of State Highway 99 in the southeast region of the City of Chico, Butte County, California. The Study Area (317 acres) is inclusive of the project site, as well as the 0.80-acre North Addendum Area and the 1.00 acre West Addendum Area. The “project site” analyzed in the biological surveys was approximately 315 acres, slightly larger than the 313 acre project site referred to in the site plans and throughout this EIR. However, this 315-acre project site included in the Study Area refers to the same area as the 313-acre project site, and the discrepancy is due to boundary mapping differences. The project site is located in the northern portion of the Chico USGS 7.5-minute quadrangle map (USGS 2016). It is bounded by East 20th Street to the north, old Potter Road to the east (now the Steve Harrison Memorial Bike Path, a Class-I paved bike path maintained by the City of Chico), Skyway Road to the south, and adjacent development to the west; it is bisected by Bruce Road, which follows a north/south alignment through the project site.

The project site is generally level open space, gradually sloping up to the northeast from elevations of 225 feet at its south border along the Skyway to 267 feet on the north border along E. 20th Street. The site was historically used as rangeland, although little grazing has taken place over the past 25 years. All site parcels are currently vacant and undeveloped with the exception of dirt and gravel access roads. The Butte Creek Diversion Channel runs in a north-south direction through the eastern portion of the site, about midway between Bruce Road and the Steve Harrison Memorial Bike Path.

A 14.76-acre parcel (APN 018-510-002, hereafter referred to as the “Doe Mill-Schmidbauer Meadowfoam Preserve”) is located on the south side of East 20th Street between the Butte Creek Diversion Channel and the Steve Harrison Memorial Bike Path, near the northeasterly corner of the project site. Although not considered part of the proposed project site, the Doe Mill-Schmidbauer Meadowfoam Preserve was dedicated in fee title to the City of Chico in 1989 by the owner of the Stonegate project site in anticipation of mitigation requirements for developing housing on adjacent lands, which comprise the proposed project site. The City prepared a Land Management Plan for the preserve parcel in 1996, however, no active management efforts have occurred at the site since a control burn was conducted in 1999.

The project site is located on the eastern edge of the City limits and is surrounded on three sides by urban development including single and multi-family residences to the north, single-family residences to the west, and commercial land to the south. To the east is privately owned rangeland and open space that slopes gently up in elevation to rolling foothill terrain. The adjacent land to the east is outside of the City limits.

### **Soil Characteristics**

Five soil types are found on-site: Doemill-Jokerst complex, 3 to 8 percent slopes; Redtough-Redswale complex, 0 to 2 percent slopes; Redsluff gravelly loam, 0 to 2 percent slopes; Wafap-Hamslough complex, 0 to 2 percent slopes; and Clearhayes-Hamslough complex, 0 to 2 percent slopes (USDA 2006). Throughout much of the project site, soils are very thin and situated over a hardpan of cemented, cobbly, and gravelly alluvium derived from volcanic rocks.

### **Hydrology**

The project site is entirely within the Butte Creek watershed (HUC 18020158). The Butte Creek Diversion Channel is the dominant drainage within the project site. The Butte Creek Diversion Channel is a named blue-line stream on the Chico USGS 7.5-minute quadrangle and supports intermittent flows in a roughly north to south direction. The Butte Creek Diversion Channel is bounded to the west by an approximately 20-foot tall levee throughout the project site. Two unnamed tributaries to the Butte Creek Diversion Channel flow through the property generally in an east to west direction in the northeast and southeast portions of the property. In addition, a dendritic network of vernal swales flows through the project site in a roughly northeast to southwest direction. The main vernal swale channel has a culverted crossing under Bruce Road, but many of the smaller swales are divided and hydrologically separated by the road

crossing. Hydrological conditions have likely been substantially altered over time by a combination of on- and off-site development including Bruce Road, the levee adjacent to the Butte Creek Diversion Channel, various small drainage ditches and berms throughout the project site, and residential development in the upstream watershed.

Precipitation within the region falls predominantly as rainfall with an annual average of 26.23 inches recorded at the nearest weather station, which is located approximately three miles west of the project site (USDA 2016). The majority of rainfall (21.12 inches) occurs during the typical wet season from November to March (USDA 2016).

### **Biological Communities**

Biological communities found within the Study Area include developed land, annual grassland, seasonal wetlands (depressional and riverine), perennial marsh, vernal pools, ephemeral, intermittent, and perennial drainages, ditch/canal, excavated pits, riparian oak woodland, and mixed riparian woodland. Non-sensitive biological communities include developed land and annual grassland. Eleven sensitive biological communities are found in the project site: seasonal wetlands (depressional and riverine), perennial marsh, vernal pool, ephemeral, intermittent, and perennial drainage, ditch/canal, excavated pits, riparian oak woodland, and mixed riparian woodland. These biological communities and aquatic resources are summarized in Table IV.D-1, are shown on Figures IV.D-1 and IV.D-2, and are described in more detail below. The descriptions provided below are based on site the surveys conducted by WRA in 2016 and by Foothill in 2017.

**Table IV.D-1. Summary of Biological Communities in the Study Area**

<b>Community Type</b>	<b>Study Area (acres) / Linear Feet</b>
<b>Non-Sensitive</b>	
Developed land	26.00
Non-Native Annual grassland	269.18
<b>Sensitive</b>	
Depressional seasonal wetland	4.02
Perennial marsh	1.24
Vernal pool	3.83
Riverine seasonal wetland (vernal swale)	4.73 / 24,247
Ephemeral drainage	0.30 / 1,164
Intermittent drainage	0.54 / 1,776
Perennial drainage	5.12 / 6,212
Ditch/Canal	0.40 / 2,332
Excavated pit	0.07
Riparian oak woodland	0.56
Mixed riparian woodland	1.10
<b>Study Area</b>	<b>317.03</b>



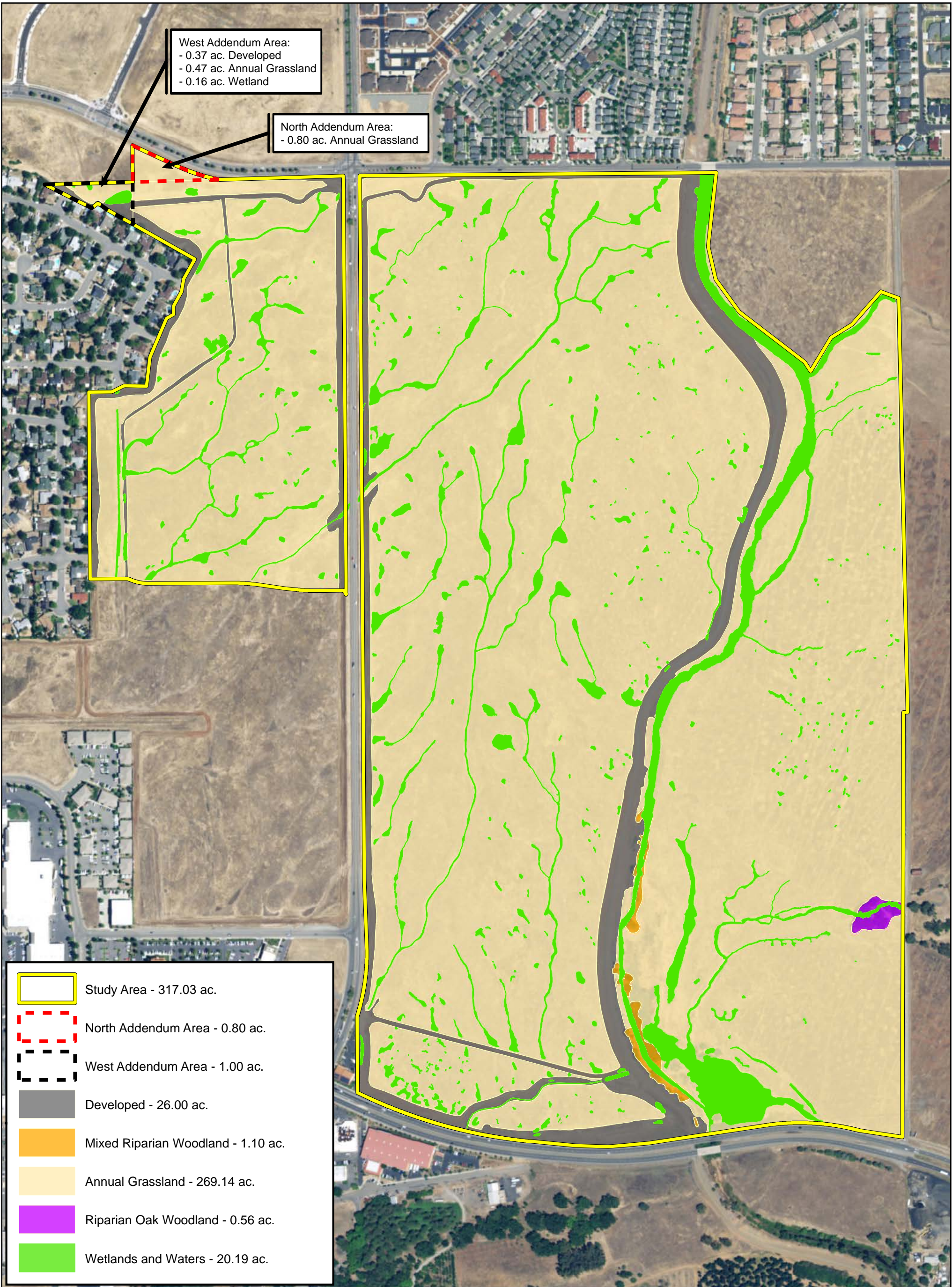


Figure IV.D-1 Biological Communities

Stonegate Vesting Tenative Subdivision  
Map and GPA/Rezone  
City of Chico, California



0 250 500 1,000  
Feet

Map Prepared Date: 7/26/2017  
Map Prepared By: mrochelle  
Base Source: Esri Streaming - NAIP 2014  
Data Source(s): WRA, Rolls Anderson & Rolls



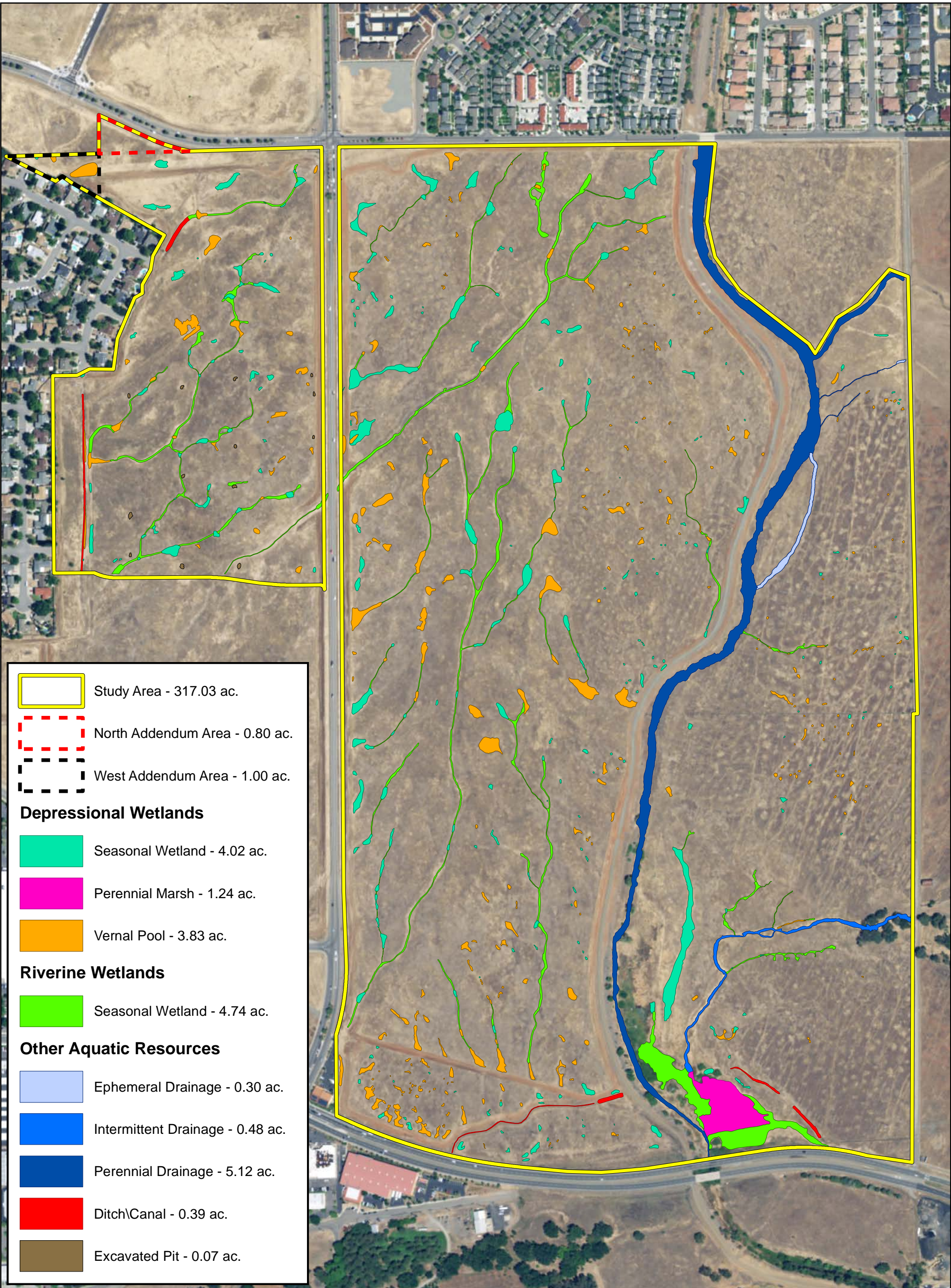
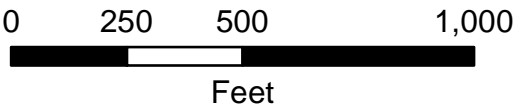


Figure IV.D-2. Aquatic Resources

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Map Prepared Date: 7/26/2017  
Map Prepared By: mrochelle  
Base Source: Esri Streaming - NAIP 2014  
Data Source(s): WRA, Foothill Associates



## *Non-Sensitive Biological Communities*

### Developed Land

Developed land occupies approximately 26.00 acres in the Study Area, with 25.63 acres located in the project site and 0.37 acre within the west addendum area. Developed land on the property includes dirt and gravel access roads as well as a raised gravel berm and paved bike path. These areas are largely un-vegetated, although the dirt roads support sparse cover of disturbance tolerant plant species such as purple sand spurry (*Spergularia rubra*), narrowleaf cottonrose (*Logfia gallica*), windmill pink (*Petrorhagia dubia*), shining pepper grass (*Lepidium nitidum*), coastal heron's bill (*Erodium cicutarium*), vinegarweed (*Trichostema lanceolatum*), and turkey-mullein (*Croton setiger*).

Developed areas typically provide minimal habitat for wildlife, particularly those that consist primarily of roads or similarly compacted substrates with little to no vegetation. Species that utilize these areas are generally common and adapted to disturbance. Wildlife species observed in developed areas of the property include western fence lizard (*Sceloporus occidentalis*) and killdeer (*Charadrius vociferous*); the latter is one of a few bird species that may nest in these portions of the project site.

### Annual Grassland

Annual grassland comprises the vast majority of the Study Area (approximately 269.18 acres), with 267.87 acres located in the project site, 0.80 acre within the north addendum area, and 0.47 acre within the west addendum area. Annual grasslands are known throughout California on all aspects and topographic positions and are underlain by a variety of substrates. Annual grasslands are typically dominated by non-native and native annual grasses and forbs along with scattered native wildflowers. This community contains elements non-native grassland (element code 42200) as described by Holland (1986) and wild oats grassland (*Avena* spp. Semi-Natural Herbaceous Alliance as described by *A Manual of California Vegetation* (CNPS 2016a).

Plant species observed in annual grasslands in the project site include medusa head grass (*Elymus caput-medusae*), Italian ryegrass (*Festuca perennis*), oats (*Avena barbata* and *A. fatua*), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), foxtail barley (*Hordeum murinum*), yellow starthistle (*Centaurea solstitialis*), blow wives (*Achyrrachaena mollis*), harvest brodiaea (*Brodiaea coronaria*), yellow mariposa (*Calochortus luteus*), soaproot (*Chlorogalum angustifolium*), purple clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), field bindweed (*Convolvulus arvensis*), frying pans (*Eschscholzia lobbi*), wild geranium (*Geranium dissectum*), rose clover (*Trifolium hirtum*), narrow leaved onion (*Allium amplexans*), and hairy vetch (*Vicia villosa*), among many other grasses and forbs.

Annual grasslands in the project site occur on both low floodplain terraces adjacent to seasonal wetlands and on high terraces characterized by mima mound topography. Mima mounds are natural mounds forming a conspicuous hummock pattern across the landscape. Mima mounds

are typically found in areas with shallow soils and are commonly associated with vernal pools in California (Keeler-Wolf *et al.* 1998). Soils are very thin throughout annual grasslands within the project site (approximately 2 to 10 inches) and are underlain by cemented, cobbly and gravelly alluvium derived from volcanic rocks. Within the project site, mounds are typically dominated by a dense cover of non-native annual grasses while depressions between the mounds are more sparsely vegetated and support more native plant species, especially native forbs.

Although annual grasslands are typically dominated by non-native herbaceous species, they often provide important habitat for native wildlife. Small mammals and herpetofauna (reptiles and amphibians) utilize subterranean refuge (burrows) and other types of cover within grasslands, and many native bird species nest and forage there. Wildlife species observed within annual grasslands on the property include black-tailed jackrabbit (*Lepus californicus*) and western meadowlark (*Sturnella neglecta*), as well the special-status white-tailed kite (*Elanus leucurus*), which uses grasslands for foraging. Common wildlife species that may also occur on-site in this community include western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and gopher snake (*Pituophis catenifer*). Special-status wildlife species that may occur within this community include grasshopper sparrow (*Ammodramus savannarum*) and western spadefoot (*Spea hammondi*); the latter is potentially present in underground refugia.

### *Sensitive Biological Communities*

The acreage of sensitive biological communities potentially subject to U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) jurisdiction are provided in Table IV.D-2, below. Additional regulatory background regarding Corps, RWQCB, and CDFW jurisdiction is provided in the regulatory setting section.

### Perennial Marsh

Perennial marsh comprises approximately 1.24 acres of the project site within the southeastern portion of the stream corridor (Foothill 2017). Perennial marshes can occur as the result of natural and/or artificial water flows associated with agricultural or residential water uses. Typically, depressional perennial marshes remain inundated or saturated throughout the year. The persistence of inundation/saturation throughout the year permits the growth of warm-season wetland grasses and perennial herbaceous plant species.

**Table IV.D-2. Summary of Federal and State Potentially Jurisdictional Areas within the Study Area**

Habitat Type	Extent of Potential Jurisdiction		
	Corps Jurisdiction (Section 404)	RWQCB Jurisdiction (Section 401/ Porter-Cologne)	CDFW Jurisdiction (Section 1602)
<b>Riparian</b>	<b>n/a</b>	<b>1.66 acres</b>	<b>1.66 acres</b>
Mixed riparian woodland	n/a	1.10 acres	1.10 acres
Riparian oak woodland	n/a	0.56 acre	0.56 acre
<b>Wetlands</b>	<b>14.29 acres</b>	<b>14.29 acres</b>	<b>1.24 acres</b>
Depressional seasonal wetlands	4.02 acres	4.02 acres	n/a
Vernal pools	3.83 acres	3.83 acres	n/a
Perennial marsh	1.24 acres	1.24 acres	1.24 acres
Riverine seasonal wetlands	4.73 acres	4.73 acres	n/a
Ditch/Canal	0.40 acre	0.40 acre	n/a
Excavated pit	0.07 acre	0.07 acre	n/a
<b>Non-Wetland Waters</b>	<b>5.96 acres</b>	<b>5.96 acres</b>	<b>5.96 acres</b>
Ephemeral drainage	0.30 acre [1,164 linear feet]	0.30 acre [1,164 linear feet]	0.30 acre [1,164 linear feet]
Intermittent drainage	0.54 acre [1,776 linear feet]	0.54 acre [1,776 linear feet]	0.54 acre [1,776 linear feet]
Perennial drainage	5.12 acres [6,212 linear feet]	5.12 acres [6,212 linear feet]	5.12 acres [6,212 linear feet]
<b>TOTAL JURISDICTIONAL AREA</b>	<b>20.25 acres</b>	<b>21.91 acres</b>	<b>8.86 acres</b>

Within the Great Central Valley, depressional perennial marshes typically occur in association with the lowland terminus of local riverine watersheds or as the result of artificial excavation activities in low-lying areas exhibiting historic hydric soils conditions, often resulting in artificially created impoundments, such as ponds or reservoirs. The perennial marsh in the project site contains elements of coastal and valley freshwater marsh as described by Holland (1986) and cattail marsh (*Typha* spp. Herbaceous Alliance) as described by as described by *A Manual of California Vegetation* (CNPS 2016a). Perennial marshes are known throughout California on all aspects and topographic positions, underlain by a variety of substrates, but are most frequently

associated with estuarine and/or riverine systems and contain substantial muck within the soils. Frequently, perennial marshes are situated in-channel, below the ordinary high water mark (OHWM), or on the fringe of the stream.

In the project site, the Corps verified delineation identifies a perennial marsh is located adjacent to the Butte Creek Diversion Channel in the southeastern portion of the site, near the mixed riparian woodland and seasonal wetlands. WRA identified perennial marsh habitat within the northern portion of the Butte Creek Diversion Channel. Due to perennial hydrology, marsh habitat is likely interspersed throughout the Butte Creek Diversion Channel. Dominant vegetation within the depressional perennial marsh includes: curly dock (*Rumex crispus*), Himalayan blackberry (*Rubus ameniacus*), narrow leaf cattail (*Typha angustifolia*), common rush (*Juncus effuses*), nut-sedge (*Cyperus sp.*), and spikerush (*Eleocharis macrostachya*), and other freshwater emergent vegetation. All areas mapped as perennial marsh support a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as jurisdictional features under Section 404 of the CWA. These features are potentially subject to Corps and RWQCB jurisdiction as Waters of the U.S. and State. Perennial marsh is also potentially subject to Section 1602 of the California Fish and Game Code ("CFGF"). See regulatory setting section below for more information.

The aquatic portions of perennial marsh often host a variety of invertebrate species as described for vernal pools above. Dependent upon the setting, marshes may also support fishes and breeding by common amphibians. Additionally, emergent wetland vegetation within marshes is typically used for foraging, shelter, and nesting by a variety of birds.

### Vernal Pools

Vernal pools comprise approximately 3.68 acres of the project site and 0.15 acre of the west addendum area, for a total of 3.83 acres within the Study Area. Vernal pools are shallow, seasonally inundated depressional wetlands that form in soils with a subsurface layer that restricts the downward flow of water. The vernal pools within the Study Area are northern hardpan vernal pools (element code: 44110) as described by Holland (1986) and Fremont's goldfields – Downingia vernal pools (*Lasthenia fremontii* – *Downingia [bicornuta]* Herbaceous Alliance) as described by *A Manual of California Vegetation* (CNPS 2016a). Northern hardpan vernal pools occur within depressions on cemented soils such as the Corning, Red Bluff, Redding, and San Joaquin soil series within and around the Great Central Valley. Vernal pool soils in the project site are typically very thin (approximately 1 to 3 inches) and are underlain by a hardpan of cemented, cobbly and gravelly alluvium derived from volcanic rocks. These vernal pools are characterized by a low, amphibious, herbaceous community dominated by annual herbs and grasses. Germination and growth begin with winter rains, often continuing when inundated. Rising spring temperatures evaporate the pools, leaving concentric bands of vegetation that colorfully encircle the drying pool (Holland 1986). This community is found primarily on older geomorphic surfaces and on volcanic substrates (CNPS 2016a). Vernal pool features within the project site occur in topographic depressions that vary in size, depth, and hydroperiod.

Plant species observed in vernal pools onsite include bristled downingia (*Downingia bicornuta* var. *bicornuta*), horned downingia (*D. ornatissima* var. *ornatissima*), spikerush, coyote thistle (*Eryngium vaseyi*), vernal pool goldfields (*Lasthenia fremontii*), white headed navarretia (*Navarretia leucocephala* ssp. *leucocephala*), common vernal pool allocarya (*Plagiobothrys stipitatus* var. *micranthus*), woolly marbles (*Psilocarphus oregonus*), annual beard grass (*Polypogon monspeliensis*), and barley (*Hordeum marinum* ssp. *gussoneanum*). Hydrology sources include direct precipitation and sheet flow. All areas mapped as vernal pools contain a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as jurisdictional features under Section 404 of the Clean Water Act (CWA). These features are potentially subject to Corps and RWQCB jurisdiction as Waters of the U.S. and State as described in greater detail under the regulatory setting section below.

Vernal pools typically provide habitat for a variety of invertebrate species, including species that are wholly aquatic and others that are aquatic primarily during larval stages. They are used for breeding and foraging by common amphibian species such as Sierran chorus frog (*Pseudacris sierra*). Additionally, inundated vernal pools often provide important foraging and resting habitat for waterfowl and shorebirds. No wildlife species were observed within vernal pools on the property during the site visits, although the pools were only visually examined and no protocol-level surveys were completed. Special-status wildlife with the potential to occur in the site's vernal pools include western spadefoot (for aquatic breeding) and vernal pool branchiopods (fairy and tadpole shrimps), some of which are listed under the Endangered Species Act.

#### Seasonal Wetlands within the Study Area

##### **Depressional Seasonal Wetlands**

Depressional seasonal wetlands comprise approximately 4.01 acres of the project site and 0.01 acre of the west addendum area for a total of 4.02 acres within the Study Area. Depressional seasonal wetlands exhibit a hydrologic regime dominated by saturation, rather than inundation. Depressional seasonal wetlands within the site occur as depressions within the topography with a hydrologic regime dominated by saturation and capable of supporting hydrophytic plant species and hydric soils. Dominant vegetation within the depressional seasonal wetlands includes: spikerush, Italian ryegrass, rattail sixweeks grass (*Festuca myuros*), rabbitfoot grass (*Polypogon monspeliensis*), and Mediterranean barley.

##### **Riverine Seasonal Wetlands**

Riverine seasonal wetlands or vernal swales comprise 24,247 linear feet or 4.73 acres of the project site. Riverine seasonal wetlands are defined by a hydrologic regime dominated by unidirectional flow of water. Riverine seasonal wetlands typically occur in topographic folds or swales and represent natural drainages that convey sufficient water to support wetland vegetation. Riverine seasonal wetlands typically convey water during and shortly after storm events.

Riverine seasonal wetlands occur in the project site as dendritic networks of generally narrow, roughly linear depressions that convey channelized flow during the wet season. These riverine seasonal wetlands are an important component of the larger vernal pool complex and act as swales, which often provide hydrologic connections between multiple vernal pools. These wetlands are highly variable in plant composition, depending on the frequency and duration of inundation and/or saturation, as well as average flow velocities. For example, larger swales with higher flow velocities typically have large areas of bare bedrock and very sparse vegetative cover (~5%), while smaller swales typically have deeper soils (still less than 5 inches in depth) and higher vegetative cover.

Compared to vernal pools, vernal swales are typically more sparsely vegetated due to the presence of channelized flow and are dominated by a mix of generalist hydrophytic species, rather than the suite of vernal pool endemics that typically dominate vernal pools in the Study Area. These features are typically sparsely vegetated with hydrophytic grasses and forbs such as barley, Italian ryegrass, coyote thistle, and vernal pool goldfields. Vegetation composition is likely seasonally variable with upland species encroaching more into swale features during the dry season. Dominant vegetation within the riverine seasonal wetlands includes Italian ryegrass, spikerush, and Mediterranean barley.

Soils are very thin (approximately 0 to 5 inches) and are underlain by cemented, cobbly and gravelly alluvium derived from volcanic rocks. Hydrology sources include direct precipitation and runoff from the surrounding watershed. All areas mapped as riverine seasonal wetlands support a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as jurisdictional features under Section 404 of the Clean Water Act

In terms of providing habitat for wildlife, riverine seasonal wetlands are broadly similar to vernal pools, although periods of average continuous inundation are often shorter, and thus both species diversity and overall utilization may be lower. Swales may also provide hydrologic connectivity between vernal pools and other seasonal water features, facilitating the dispersal and movement of aquatic organisms. Within the Study Area, riverine seasonal wetlands that are inundated for relatively long periods and/or hold larger water volumes may be occupied by western spadefoot and vernal pool branchiopods.

#### Other Aquatic Resources within the Study Area

##### **Ephemeral Drainage**

Approximately 1,164 linear feet of ephemeral drainage comprises approximately 0.30 acres of the project site. Ephemeral drainages are features that do not meet the three-parameter criteria for vegetation, hydrology and soils, but do convey water and exhibit an “ordinary high water mark.” Ephemeral drainages are primarily fed by stormwater runoff. These features convey flows during and immediately after storm events but may stop flowing or begin to dry if the interval between storm events is long enough. Typically, these features exhibit a defined bed and bank and often show signs of scouring as a result of rapid flow events. Within ephemeral

drainages, topographic depressions in the bed of the feature may exhibit vegetation patterns commonly associated with vernal pools or depressional seasonal wetlands. Often these features are lightly vegetated due to seasonal rapid-flow events resulting in a scoured channel, bed, and bank. Dominant vegetation identified by Foothill within the bed and along the banks of the ephemeral drainages include upland species including common vetch, filaree, slender oat, wild oat, medusa head, and soft chess.

Areas mapped as ephemeral drainage include an un-named tributary to the Butte Creek Diversion Channel in the northeastern portion of the Study Area. Ephemeral drainages in the Study Area flow over partially exposed bedrock with cobbles. Plant species observed within the ephemeral drainage include gumweed (*Grindelia camporum*), coyote thistle, and spikerush, Mediterranean barley, and Italian ryegrass, among other species. During the site visit by WRA, surface water was observed in isolated pools within the Butte Creek Diversion Channel. Areas mapped as ephemeral drainages are jurisdictional under Section 401 and 404 of the Clean Water Act and Section 1602 of the CFGC.

When they are inundated, ephemeral drainages typically host invertebrate populations and may also be used by fishes (if connected to perennial waters) and breeding amphibians. Wildlife species observed in ephemeral drainages in the Study Area include bullfrog and western toad. In the Study Area, ephemeral drainages are unlikely to support special-status wildlife species.

#### **Intermittent Drainage**

Approximately 1,776 linear feet of intermittent drainage comprises approximately 0.54 acres of the project site. Intermittent drainages, as in ephemeral drainages, are features that do not meet the three-parameter criteria for vegetation, hydrology, and soils but do convey water and exhibit an “ordinary high water mark.” Water flows within intermittent drainages are fed primarily by a seasonally perched groundwater table and supplemented by precipitation and stormwater runoff. After the initial onset of rains, these features have persistent flows throughout and past the end of the rainy season. Typically, these features exhibit a defined bed and bank and show signs of scouring as a result of rapid flow events. The bed of intermittent drainages consists of cobble often interrupted with bedrock. Water was present during the field delineations conducted by Foothill. Dominant vegetation observed along the banks of the intermittent drainages includes blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), American wild mint (*Mentha arvensis*), common rush, Italian ryegrass, wild oat, medusa head, and soft chess.

Areas mapped as intermittent drainage include an un-named tributary to the Butte Creek Diversion Channel, which runs generally in an east-west direction in the southeast portion of the project site. Plant species observed by WRA within the intermittent drainage include gumweed, coyote thistle, and spikerush, Mediterranean barley, and Italian ryegrass, among other species. A tributary in the southeast portion of the project site flows through a riparian oak woodland community (described below). The tributary was dry at the time of the site visit by WRA and encroached by Italian ryegrass. Areas mapped as intermittent drainage are jurisdictional under Section 401 and 404 of the Clean Water Act and Section 1602 of the CFGC.



When they are inundated, intermittent drainages typically host invertebrate populations and may also be used by fishes (if connected to perennial waters) and breeding amphibians. Wildlife species observed in intermittent drainages in the Study Area include bullfrog and western toad. In the project site, intermittent drainages are unlikely to support special-status wildlife species.

### **Perennial Drainage**

Approximately 6,212 linear feet of perennial drainage comprises approximately 5.12 acres of the project site. Perennial drainages are features that may not meet the three-parameter criteria for vegetation, hydrology, and soils, but do convey water and exhibit an “ordinary high water mark.” Perennial drainages generally convey unidirectional water flows throughout the entire year. Perennial drainages typically consists of a channel, bed, and bank and are devoid of vegetation due to the scouring effect of flowing water. Perennial drainages are often bordered by wetland vegetation communities of various composition and cover depending on flow rates, duration of flows, and soil types. Water was observed flowing during the Foothill wetland delineation. Dominant vegetation observed along the banks of the perennial drainage includes Italian ryegrass, arroyo willow (*Salix lasiolepis*), narrow leaf cattail, rabbitfoot grass, soft chess, and ripgut brome. Areas mapped as perennial drainage include the Butte Creek Diversion Channel, which runs generally in a north-south direction through the eastern portion of the site, and an un-named tributary, which runs generally in an east-west direction in the northeast portion of the Study Area. Perennial drainages in the Study Area flow over partially exposed bedrock with cobbles. Plant species observed within the Butte Creek Diversion Channel include gumweed, coyote thistle, and spikerush, Mediterranean barley, and Italian ryegrass, among other species. Scattered trees and shrubs adjacent to the Butte Creek Diversion Channel are described in the mixed riparian woodland community below. During the site visit by WRA, surface water was observed in isolated pools within the Butte Creek Diversion Channel. Areas mapped as perennial drainage are jurisdictional under Section 401 and 404 of the Clean Water Act and Section 1602 of the CFGC.

When they are inundated, perennial drainages typically host invertebrate populations and may also be used by fishes (if connected to perennial waters) and breeding amphibians. Wildlife species observed in perennial drainages in the Study Area include bullfrog and western toad. In the Study Area, perennial drainages are unlikely to support special-status wildlife species.

### **Ditch/Canal**

Approximately 2,332 linear feet of ditch/canal comprising approximately 0.40 acre are located within the project site. Ditches/canals are man-made channels that have been excavated for the purpose of conveying water. At the time of the WRA May site visits, ditches/canals were dry and supported sparse to dense cover of annual grasses such as barley and Italian ryegrass as well as some vernal pool species such as white headed navarretia and coyote thistle. Soils are thin and rocky with cobbles. The ditches/canals contained water at the time of the field delineations by Foothill. Dominant vegetation along the banks of the ditches/canals are comprised of upland vegetation including soft chess, ripgut brome, and medusa head.

Ditch/canal features in the project site are potentially subject to Corps and RWQCB jurisdiction as Waters of the U.S. and State.

When they are inundated, ditches/canals may host invertebrate populations and be used by amphibians such as Sierran chorus frogs for breeding. Emergent wetland and other vegetation within ditches may provide foraging habitat and shelter for a variety of common wildlife species and nesting substrates for birds. No wildlife species were observed in the project site's ditches/canals during the WRA May site visits, and special-status wildlife are unlikely to occur there.

#### **Excavated Pit**

An excavated pit comprises approximately 0.07 acres of the project site. The pits were excavated to obtain information on soils within the Study Area. The excavated pits contained water at the time of the Foothill wetland delineations and lacked vegetation.

#### **Riparian Oak Woodland**

Riparian oak woodland comprises approximately 0.56 acre of the project site. Riparian oak woodland in the project site contains elements of valley oak woodland (element code: 71130) as described by Holland (1986) and valley oak woodland (*Quercus lobata* Woodland Alliance) as described by *A Manual of California Vegetation* (CNPS 2016a). Tree canopy in this community is intermittent and dominated by valley oak. Within the project site, this community is associated with an un-named tributary to the Butte Creek Diversion Channel, which runs in an east-west direction in the southeast region of the property. The tree canopy is dominated by valley oak with blue oak and interior live oak (*Q. wislizeni* var. *wislizeni*). Shrubs are largely absent and the herbaceous layer is grassy and dominated by oats and Italian ryegrass. Riparian oak woodland is considered a sensitive community under Section 1602 of the CFGC and may be regulated by the RWQCB and CDFW (as described in greater detail under regulatory setting section below).

Riparian oak woodland generally features structurally-complex trees in close proximity to water or otherwise mesic soils, and thus provides high-quality habitat for a wide variety of wildlife including terrestrial invertebrates, mammals, many types of birds, and herpetofauna. Wildlife species observed in riparian oak woodland in the project site include acorn woodpecker (*Melanerpes formicivorus*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), and western scrub jay (*Aphelocoma californica*), all of which may nest there. Special-status birds that may also utilize riparian oak woodland in the project site for foraging and nesting include oak titmouse (*Baeolophus inornatus*), white-tailed kite, loggerhead shrike (*Lanius ludovicianus*), yellow-billed magpie (*Pica nuttalli*), and Nuttall's woodpecker (*Picoides nuttalli*); special-status mammals that may occupy this habitat include pallid bat (*Antrozous pallidus*).

### Mixed Riparian Woodland

Mixed riparian woodland comprises approximately 1.10 acres of the project site. This community is associated with the southern portion of the Butte Creek Diversion Channel. Scattered trees and shrubs include white alder (*Alnus rhombifolia*), California coffeeberry (*Frangula californica*), ash (*Fraxinus dipetala* and *F. latifolia*), cottonwood (*Populus fremontii* ssp. *fremontii*), Himalayan blackberry, blue elderberry (*Sambucus nigra* ssp. *caerulea*), poison oak (*Toxicodendron diversilobum*), and California wild grape (*Vitis californica*). The herbaceous layer is grassy and dominated by oats and Italian ryegrass. Mixed riparian woodland is considered a sensitive community under Section 1602 of the CFGC and may be regulated by the RWQCB and CDFW (as described in greater detail under regulatory setting section below).

Mixed riparian woodland generally provides high-quality habitat for wildlife as described for riparian oak woodland above. However, vegetative structure is more diverse within this community, so both species diversity and utilization may be higher. Wildlife species observed in mixed riparian woodland in the project site include red-winged blackbird (*Agelaius phoeniceus*) and house finch (*Haemorhous mexicanus*). The special-status birds named above under oak riparian woodland have the potential to occur within the project site's mixed riparian woodland, as does the Federal listed valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

### **Special-Status Plants and Animals**

Special-status species include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA); animals listed as "fully protected" under the CFGC; animals designated as "Species of Special Concern" by CDFW; and plants listed as rare or endangered by California Native Plant Society (CNPS) [see regulatory setting section, below]. Collectively, these plants and animals are referred to as "special-status species."

The potential for occurrence of special-status species in the project site was evaluated by first determining which special-status species are known to occur in the vicinity of the project site through a literature and database search. For the purposes of this analysis, the "vicinity" of the project site was defined to include the Chico 7.5-minute USGS quadrangle in which the property is located and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the project site:

- California Natural Diversity Database (CNDDB) records (CDFW 2017)
- USFWS quadrangle species lists (USFWS 2016)
- CNPS Inventory records (CNPS 2016b)
- CDFW publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)

- CDFW publication, "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994);
- CDFW publication, *California Bird Species of Special Concern* (Shuford and Gardali 2008);
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003);
- *Fairy Shrimps of California's Puddles, Pools and Playas* (Eriksen and Belk 1999)

A site visit was conducted to evaluate the potential of the project site to support suitable habitats for special-status species. Habitat conditions observed at the project site were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the project site was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

Any special-status species observed during the site visit were documented and are discussed below. A protocol-level rare plant survey was conducted in April of 2016 for all plant species determined to have potential to occur in the project site. Protocol-level surveys have not been conducted for any special-status wildlife species with potential to occur in the project site. For some wildlife species, further studies may be necessary to determine presence or absence of a species to the specifications of regulatory agencies. In these cases, wildlife species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status wildlife species for which further protocol-level surveys may be necessary are described below.

### *Special-status Plant Species*

Forty special-status plant species have been documented in the vicinity of the project site. The potential for each of these species to occur in the project site is summarized in Appendix D-1 (Biological Resources Assessment). Figure IV.D-3 displays CNDDDB occurrences of special-status plant species that have been documented within a 5-mile radius of the project site (CDFW 2017). Twelve plant species were determined to have a moderate or high potential to occur onsite. Two rare plant species were observed in the project site during the site assessments: Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*) and Shield-bracted monkeyflower (*Mimulus glaucescens*).

The remaining 28 special-status plant species are unlikely or do not have the potential to occur within the project site due to one or more of the following reasons:

- Hydrologic conditions (e.g., marsh habitat, perennial streams) necessary to support the special-status plant(s) are not present in the project site;
- Edaphic (soil) conditions (e.g., serpentine, alkaline soils, clay soils) necessary to support the special-status plant(s) are not present in the project site;
- Associated vegetation communities (e.g., chaparral, coniferous forest) necessary to support the special-status plant(s) are not present in the project site;
- The project site is outside of the known elevation and/or localized distribution of the special-status plant(s).

Special-status plant species that have the potential to be present are discussed in detail below.



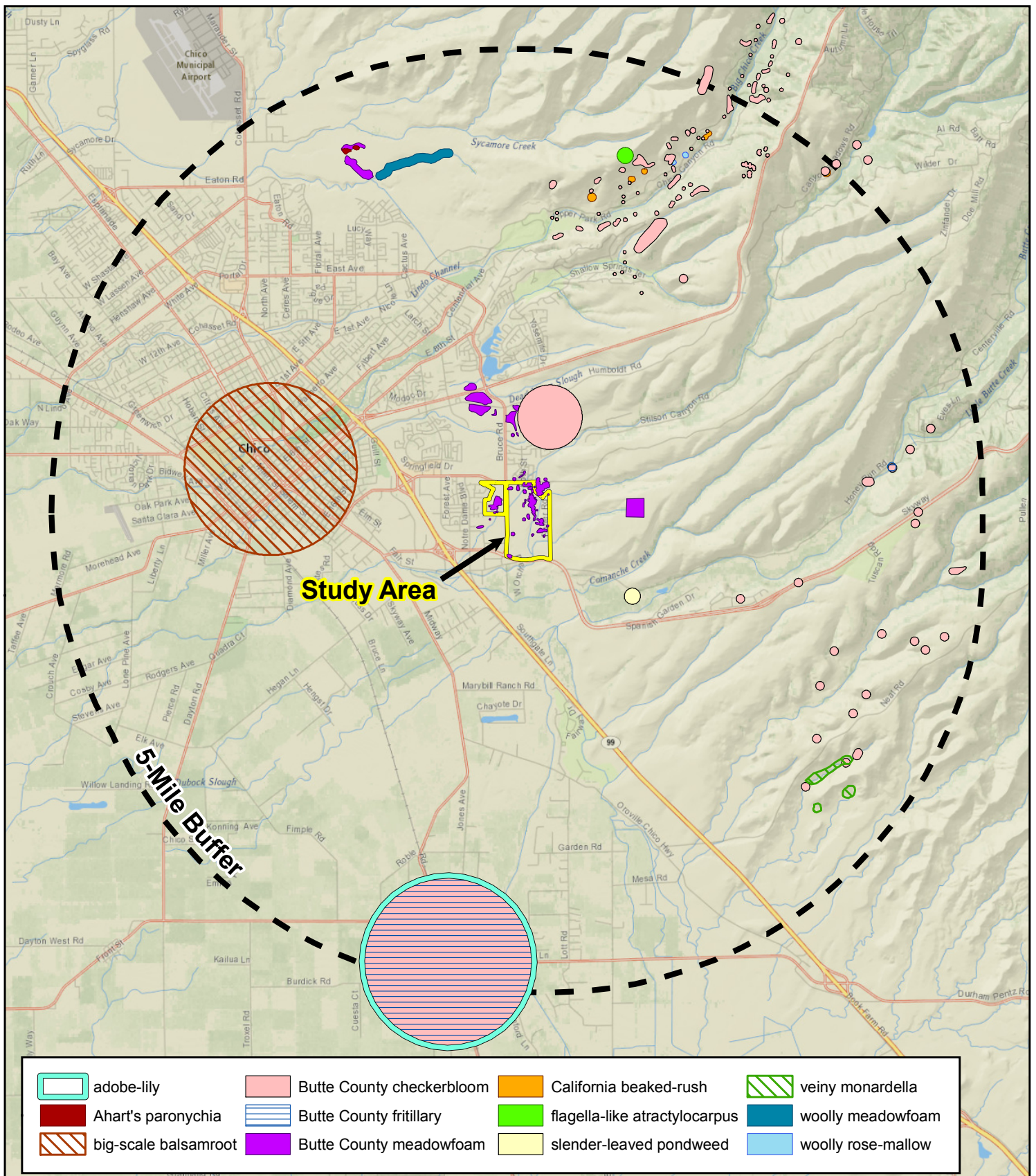


Figure IV.D-3 Special Status Plant  
Species within 5 Miles of the Project Site

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California

0 0.5 1 2  
Miles



Map Prepared Date: 5/13/2016  
Map Prepared By: MROchelle  
Base Source: Esri, National Geographic  
Data Source(s): WRA, CNDDB (April 2016)

**Depauperate milk-vetch (*Astragalus pauperculus*). Rank 4.3. Moderate Potential.**

Depauperate milk-vetch is an annual herb in the Fabaceae family that blooms from March to June. It typically occurs in vernal mesic areas within chaparral, cismontane woodland, or valley and foothill grassland communities, often on thin soils of volcanic origin, and at elevations ranging from approximately 200 to 3,990 feet (CNPS 2016b).

This species is known from 26 USGS 7.5-minute quadrangles in Butte, Placer, Shasta, Tehama, and Yuba counties. The nearest documented occurrence is from 1938 in former rocky pastureland, approximately 3.5 miles northwest of the project site (CCH 2016). The most recent documented occurrence in Butte County is from 2012 in Upper Bidwell Park, approximately 4 miles northeast of the project site (CCH 2016). Depauperate milk-vetch was considered to have a moderate potential to occur in vernal mesic grassland with stony, volcanically-derived soils in the project site. However, this species was not observed in the project site during the April or July 2016 rare plant surveys.

**Hoover's spurge (*Euphorbia hooveri*). Federal-threatened, Rank 1B.2. Moderate Potential.**

Hoover's spurge is an annual herb in the Euphorbiaceae family that blooms from July to September. This species is found in vernal pools at elevations ranging from approximately 80 to 820 feet (CNPS 2016b). Observed associated species include coyote thistle, barley, annual hairgrass (*Deschampsia danthonioides*), white headed navarretia, Tehama navarretia (*Navarretia heterandra*), stalked popcornflower (*Plagiobothrys tenellus*), downingia, hairy waterclover (*Marsilea vestita*), and woolly marbles.

This species is known from 11 USGS 7.5-minute quadrangles in Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties. There are two reported occurrences of this species in the vicinity of the project site (CDFW 2017). One occurrence is from 1986 and is located approximately 7 miles southeast of the project site (CDFW 2017). The other occurrence is from 2011 and is located approximately 12 miles northwest of the project site (CDFW 2017). Hoover's spurge was considered to have a moderate potential to occur in vernal pools in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*). Rank 1B.2. Moderate Potential.**

Woolly rose-mallow is a perennial herb in the Malvaceae family that blooms from June to September. This species is found in freshwater marshes and swamps, often in riprap on the side of levees, from sea level to 390 feet (CNPS 2016b). Observed associated species include valley oak, red buckthorn (*Frangula rubra*), California wild rose (*Rosa californica*), pennyroyal (*Mentha pulegium*), poison oak, California mugwort (*Artemisia douglasiana*), California grape, curly dock, rough cocklebur (*Xanthium strumarium*), willow (*Salix* sp.), and blackberry.

This species is known from 37 USGS 7.5-minute quadrangles in Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties. There are 15 reported occurrences of this species in the vicinity of the project site (CDFW 2017). The nearest and most recent documented occurrence is from 2002, over four miles northeast of the project site in

Upper Bidwell Park (CDFW 2017). Woolly rose mallow was considered to have a moderate potential to occur along the banks of the intermittent stream channel that flows through the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*). Rank 1B.1. Moderate Potential.** Red Bluff dwarf rush is an annual herb in the *Juncus* family that blooms from March to June. This species is found in vernal pools and vernal mesic areas in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland communities, at elevations ranging from approximately 110 to 4,100 feet (CNPS 2016b). Observed associated species include Oregon woolly marbles, white meadowfoam (*Limnanthes alba*), micropus (*Micropus californicus*), leafybract dwarf rush (*Juncus capitatus*), toad rush (*J. bufonius*), great valley eryngo (*Eryngium castrense*), Sacramento mint (*Pogogyne zizyphoroides*), and Italian ryegrass.

This species is known from 28 USGS 7.5-minute quadrangles in Butte, Placer, Shasta, and Tehama counties. There are two reported occurrences of this species in the vicinity of the project site (CDFW 2017). One occurrence is from 1980 and is located approximately 10 miles north of the project site. The other occurrence is from 2002 and is located approximately 12 miles southeast of the project site. Red bluff dwarf rush was considered to have a moderate potential to occur in vernal pools and vernal mesic grassland within the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*). Federal Endangered, State Endangered, Rank 1B.1. Present.** Butte County meadowfoam is an annual herb in the Limnanthaceae family that blooms from March to May. This species is found in vernal pools and vernal mesic areas in valley and foothill grassland communities, at elevations ranging from approximately 150 to 3,050 feet (CNPS 2016b). Observed associated species include peppergrass, vernal pool goldfields, big heron bill (*Erodium botrys*), common stickyseed (*Blennosperma nanum*), stalked popcorn flower, Fremont's tidy tips (*Layia fremontii*), butter 'n' eggs (*Triphysaria eriantha*), white headed navarretia, soft blow wives, common meadowfoam (*Limnanthes douglasii*), typical white meadowfoam, woolly meadowfoam (*L. floccosa* ssp. *floccosa*), Sacramento mint, great valley eryngo, California goldfields (*Lasthenia californica* ssp. *californica*), pacific foxtail (*Alopecurus saccatus*), stalked popcorn flower, Italian ryegrass, and barley.

This species is known from six USGS 7.5-minute quadrangles in Butte county CNPS (2016b). This species was documented in vernal mesic areas in the project site during the April 2016 survey and has previously been documented on the property (CDFW 2017). Approximately 5.14 acres (16,542 individuals) of Butte County meadowfoam were observed in annual grasslands and along the fringes of a few vernal pool and swale features in the project site. Figure IV.D-4 displays occurrences of Butte County meadowfoam documented during the multiple rare plant surveys used in this analysis (Appendix D-3). Species associated with Butte County meadowfoam observed in the project site include narrow leaved onion, barley, Italian



ryegrass, narrow boisduvalia (*Epilobium torreyi*), low brodiaea (*Brodiaea minor*), California plantain (*Plantago erecta*), Sierra mock stonecrop (*Sedella pumila*), Padre's shooting star (*Primula clevelandii*), vernal pool goldfields, and rose clover.

**Shield-bracted monkeyflower (*Mimulus glaucescens*). Rank 4.3. Present.** This species was observed during surveys conducted by Foothill Associates in March, April and July 2016 (Foothill 2016). Shield-bracted monkeyflower is an annual herb found on serpentine seeps, and sometimes on streambanks, in chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland from 197 to 4,068 feet (CNPS 2016b). The blooming period for this species is from February through September (CNPS 2016b). There are no CNDDDB occurrences documented for this species within a five-mile radius of the Site (Figure IV.D-4). This species was observed along the banks of the perennial drainage; the non-native annual grassland, riverine seasonal wetlands, and drainages (perennial, intermittent, and ephemeral) provide habitat for this species on Site (Foothill 2016).

**Woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*). Rank 4.2. High Potential.** Woolly meadowfoam is an annual herb in the Limnanthaceae family that blooms from March to May. This species is found in vernal pools and vernal mesic areas in chaparral, cismontane woodland, and valley and foothill grassland communities, at elevations ranging from approximately 200 to 4,380 feet (CNPS 2016b). Observed associated species include Butte County meadowfoam, padre's shooting star, butter 'n' eggs, rusty popcorn flower (*Plagiobothrys nothofulvus*), cowbag clover (*Trifolium depauperatum*), and Fremont's tidy tips.

This species is known from 39 USGS 7.5-minute quadrangles in Butte, Lake, Lassen, Napa, Shasta, Siskiyou, Tehama, and Trinity counties. There are five reported occurrences of this species in the vicinity of the project site (CDFW 2017). The nearest and most recent documented occurrence is from 1991 and is located approximately 4 miles north of the project site. Woolly meadowfoam was considered to have a high potential to occur in vernal pools and vernal mesic grassland in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Tehama navarretia (*Navarretia heterandra*). Rank 4.3. High Potential.** Tehama navarretia is an annual herb in the Polemoniaceae family that blooms from April to June. This species is found in vernal pools in valley and foothill grassland communities, at elevations ranging from approximately 100 to 3,310 feet (CNPS 2016b).



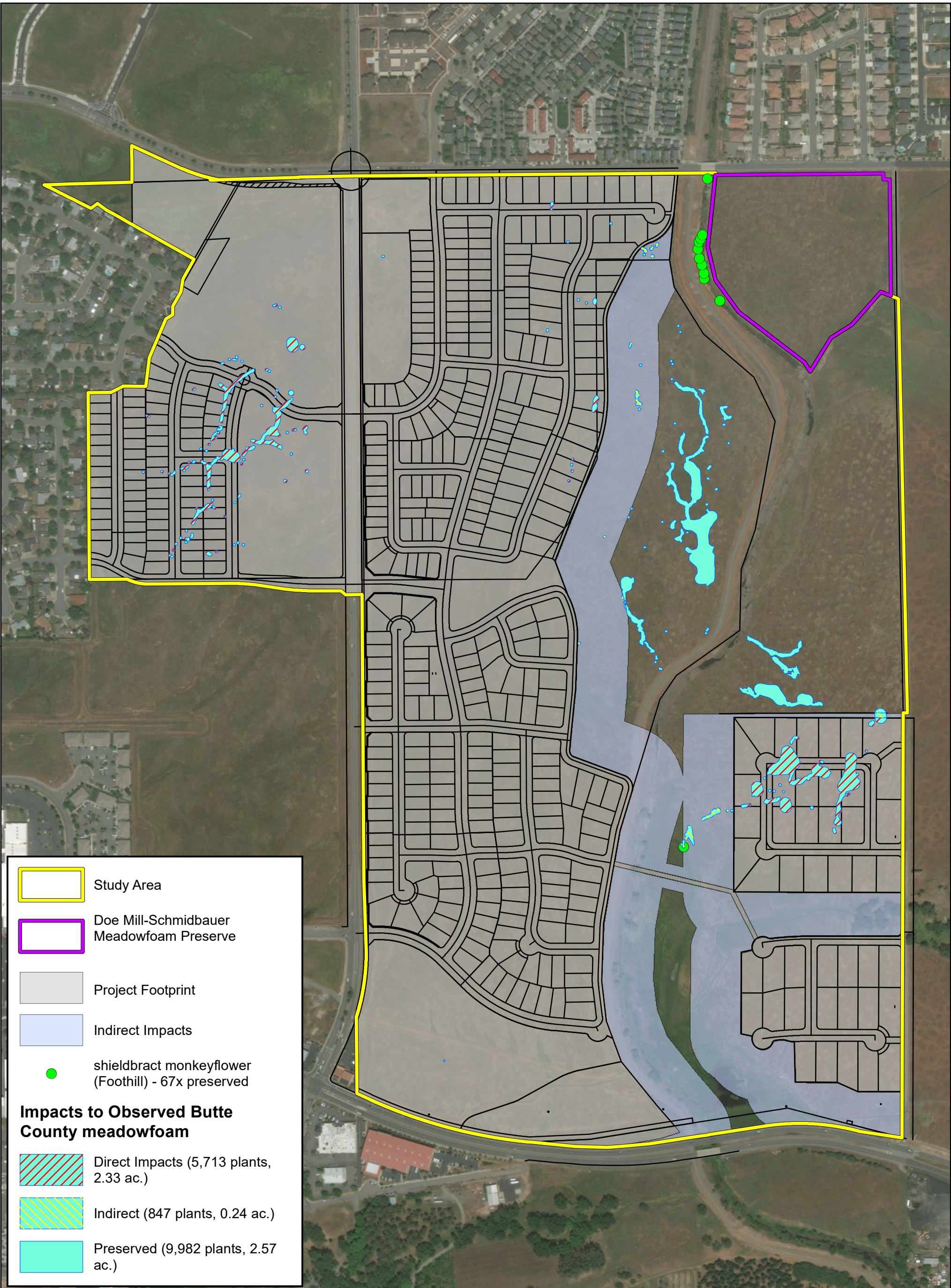
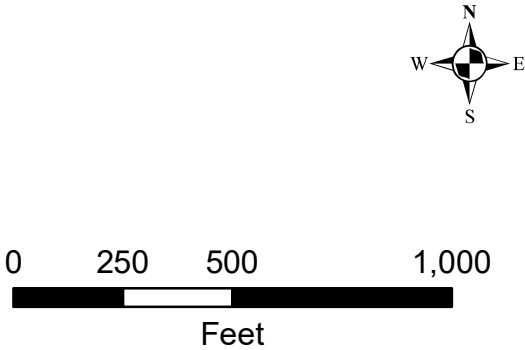


Figure IV.D-4. BCM Map/Rare Plant Survey

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Map Prepared Date: 4/2/2018  
Map Prepared By: pkobylarz  
Base Source: Esri Streaming - NAIP 2014  
Data Source(s): WRA, Rolls Anderson & Rolls, Foothill



This species is known from 17 USGS 7.5-minute quadrangles in Butte, Colusa, Lake, Napa, Shasta, Tehama, Trinity, and Yuba counties. The nearest documented occurrence is from 1988, within a quarter of a mile of the project site on the north side of E. 20<sup>th</sup> Street in an area that has since been developed (CCH 2016). The most recent occurrence in Butte County is from 2011, approximately 17 miles northwest of the project site (CCH 2016). Tehama navarretia was considered to have a high potential to occur in vernal pools and vernal mesic grasslands in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Hairy orcutt grass (*Orcuttia pilosa*). Federal Endangered, State Endangered, Rank 1B.1. Moderate Potential.** Hairy orcutt grass is an annual grass in the Poaceae family that blooms from May to September. This species is found in vernal pools at elevations from 150 to 655 feet (CNPS 2016b). Observed associated species include Hoover's spurge, swamp grass (*Crypsis schoenoides*), awnless spiralgrass (*Tuctoria Greenei*), alkali weed (*Cressa truxillensis*), saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), and coyote thistle.

This species is known from 16 USGS 7.5-minute quadrangles in Butte, Glenn, Madera, Merced, Stanislaus, and Tehama counties. There are five documented occurrences of this species in the vicinity of the project site (CDFW 2017). The nearest and most recent documented occurrence was observed at the Vina Plains Preserve, approximately 16 miles northwest of the project site in 2011 (CDFW 2017). Hairy orcutt grass was considered to have a moderate potential to occur in vernal pools in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Ahart's paronychia (*Paronychia ahartii*). Rank 1B.1. High Potential.** Ahart's paronychia is an annual herb in the Caryophyllaceae family that blooms from February to June. This species is found in vernal pools in cismontane woodland and valley and foothill grassland communities, at elevations from 100 to 1,670 feet (CNPS 2016b). Observed associated species include Fremont's tidy tips, California goldfields, California plantain, Tehama navarretia, white brodiaea (*Triteleia hyacinthina*), and annual hairgrass.

This species is known from 21 USGS 7.5-minute quadrangles in Butte, Shasta, and Tehama counties. There are three documented occurrences of this species in the vicinity of the project site (CDFW 2017). The nearest documented occurrence is from 1986 and is located approximately 4 miles northwest of the project site (CDFW 2017). The most recent documented occurrence is over 15 miles southeast of the project site (CDFW 2017). Ahart's paronychia was considered to have a high potential to occur in vernal pools and vernal mesic grasslands in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Bidwell's knotweed (*Polygonum bidwelliae*). Rank 4.3. High Potential.** Bidwell's knotweed is an annual herb in the Polygonaceae family that blooms from April to July. This species is found in volcanic soils in chaparral, cismontane woodland, and valley and foothill grassland communities, at elevations from approximately 200 to 3,940 feet (CNPS 2016b).

This species is known from 17 USGS 7.5-minute quadrangles in Butte, Shasta, and Tehama counties. The nearest documented occurrence is from 2005, within approximately one quarter mile of the project site to the north (CNPS 2016b). The most recent occurrence in Butte County is from 2010, approximately 5 miles northeast of the project site (CCH 2016). Bidwell's knotweed was considered to have a high potential to occur in grasslands in the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**California beaked-rush (*Rhynchospora californica*). Rank 1B.1. Moderate Potential.** California beaked rush is a perennial herb in the Cyperaceae family that blooms from May to July. This species is found in bogs and fens, lower montane coniferous forest, meadows and seeps, and freshwater marshes and swamps, at elevations from approximately 150 to 3,310 feet (CNPS 2016b). Observed associated species include deergrass (*Muhlenbergia rigens*), dense sedge (*Carex densa*), spike rush, shortspike hedgenettle (*Stachys pycnantha*), arroyo willow, creeping St. John's wort (*Hypericum anagalloides*), little quaking grass (*Briza minor*), and Italian ryegrass.

This species is known from eight USGS 7.5-minute quadrangles in Butte, Marin, Napa, and Sonoma counties. There are four reported occurrences of this species in the vicinity of the project site (CDFW 2017). The nearest and most recent documented occurrence is from 2002 and is located approximately four miles northeast of the project site (CDFW 2017). California beaked-rush was considered to have a moderate potential to occur in or around the large vernal pool habitat in the southeast portion of the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

**Brownish beaked-rush (*Rhynchospora capitellata*). Rank 2B.2. Moderate Potential.** Brownish beaked rush is a perennial herb in the Cyperaceae family that blooms from July to August. This species is found in mesic areas of lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest communities, at elevations from approximately 150 to 6,560 feet (CNPS 2016b). Observed associated species include spikerush, rushes, bulrushes (*Scirpus* spp.), sedges, and California pitcherplant (*Darlingtonia californica*).

This species is known from 18 USGS 7.5-minute quadrangles in nine counties. There is one reported occurrence of this species in the vicinity of the project site (CDFW 2017). The occurrence is from 1988 and is located approximately eight miles east of the project site (CDFW 2017). Brownish beaked-rush was considered to have a moderate potential to occur in or around the large vernal pool habitat in the southeast portion of the project site. However, this species was not observed during the April or July 2016 rare plant surveys.

### Special-status Wildlife Species

Forty-one special-status species of wildlife have been recorded in the vicinity of the project site. The potential for each of these species to occur in the project site is summarized in Appendix D-1 (Biological Resources Assessment). Figure IV.D-5 displays CNDDDB occurrences of special-status wildlife species documented within 5 miles of the project site. Only one special-status wildlife species was observed in the project site during the site assessment: white-tailed kite. Twelve additional special-status wildlife species have a high or moderate potential to occur in the project site.

The remaining 28 special-status wildlife species are unlikely or do not have the potential to occur within the project site due to one or more of the following reasons:

- Aquatic habitats necessary to support the special-status wildlife species (e.g., perennial streams) are not present.
- Vegetation habitats (e.g., coniferous forest, riparian woodland/forest, chaparral) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present.
- Structures or vegetation (e.g., caves, old-growth trees) necessary to provide nesting or cover habitat to support the special-status wildlife species are not present in the project site.
- The project site is outside (e.g., north of, west of) the special-status wildlife species local documented range, or specifically nesting range (generally applies to birds).

Special-status wildlife species that have the potential to be present are discussed in detail below.

#### **Pallid bat (*Antrozous pallidus*), CDFW Species of Special Concern, WBWG High Priority.**

Pallid bats are distributed from southern British Columbia and Montana to central Mexico, and east to Texas, Oklahoma, and Kansas. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. They are most abundant in the arid Sonoran life zones below 6,000 feet, but have been found up to 10,000 feet in the Sierra Nevada. Pallid bats often roost in colonies of between 20 and several hundred individuals. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias, and within bole cavities in oak trees. They have also been reported roosting in stacks of burlap sacks and stone piles. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2016).

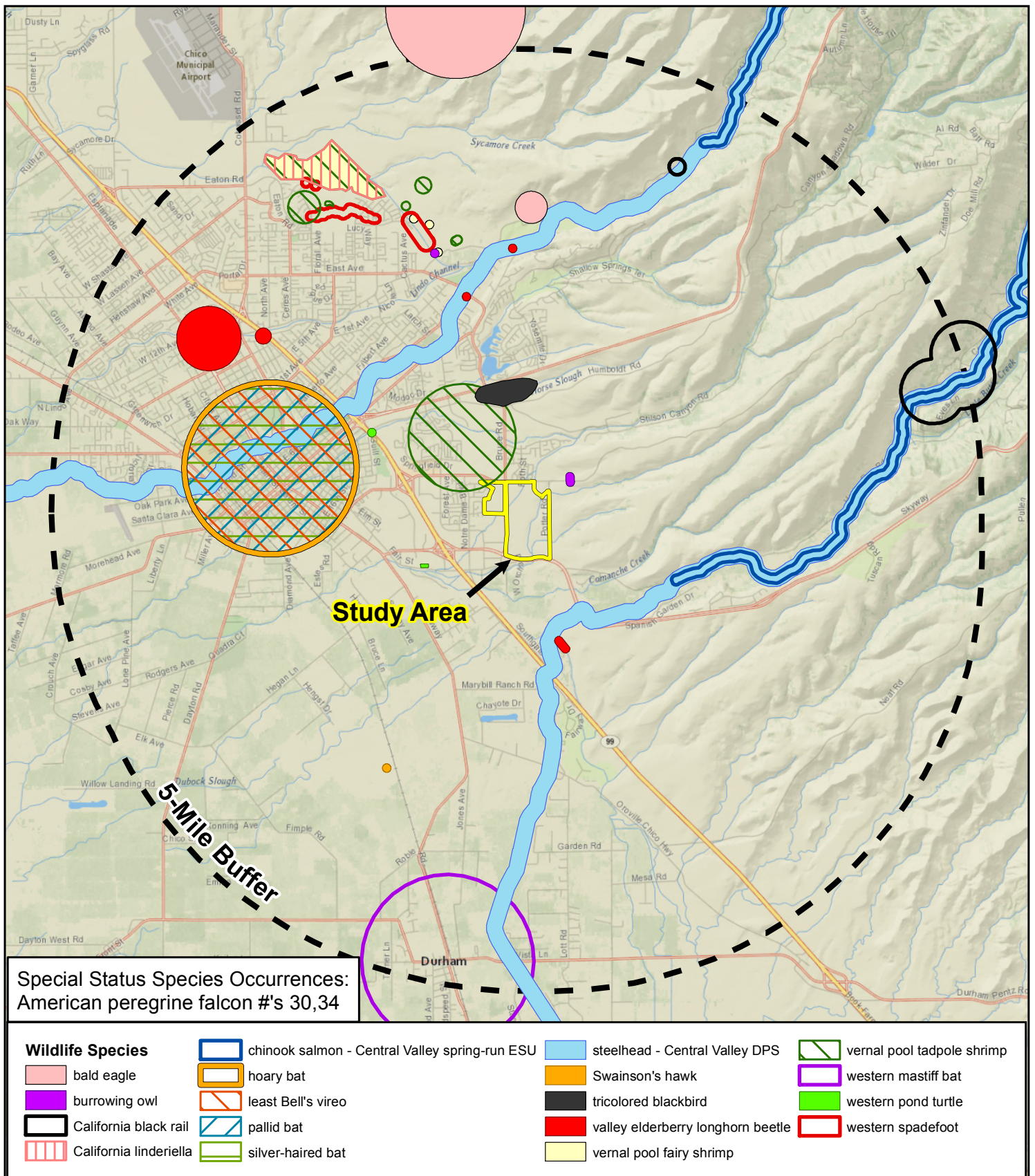


Figure IV.D-5. Special Status Wildlife Species within 5 Miles of the Project Site

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California

0 0.5 1 2  
Miles



Map Prepared Date: 5/13/2016  
Map Prepared By: MROchelle  
Base Source: Esri, National Geographic  
Data Source(s): WRA, CNDDB (April 2016)

The project site contains several tree cavities that may provide suitable roost habitat for this species, particularly in the riparian oak woodland in the southeast. Open annual grassland and aquatic features may also provide suitable foraging habitat for this species.

**Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern. Moderate Potential.** The grasshopper sparrow is a summer resident in California, wintering in Mexico and Central America. This species occurs in open grassland and prairie-like habitats with short- to moderate-height vegetation, and often scattered shrubs. Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise the majority of the diet.

The project site is within this species' nesting range as per a monograph in Shuford and Gardali (2008). Open annual grassland areas there provide suitable nesting habitat.

**Oak titmouse (*Baeolophus inornatus*). USFWS Bird of Conservation Concern. High Potential.** This relatively common species is a year-round resident throughout much of California including most of the coastal slope, the Central Valley and the western Sierra Nevada foothills. Its primary habitat is woodland dominated by oaks. In addition, the species may also occur in riparian areas, as well as residential settings where landscaping and/or preserved trees provide suitable habitat. The oak titmouse nests in tree cavities, usually natural cavities or those excavated by woodpeckers, though they may partially excavate their own (Cicero 2000). Seeds and arboreal invertebrates make up the birds' diet.

Oaks and other trees within the project site provide suitable year-round habitat for this species, including nesting. There are numerous recent observations of this species within 1.0 mile of the project site, including in directly adjacent areas (eBird 2016).

**White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Present.** The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

The project site provides typical habitat for this species, with open annual grassland for foraging and trees for nesting. Kites have been recently observed in adjacent areas (eBird 2016), and one was observed foraging over the site during the May 18, 2016 site visit.



**Loggerhead shrike (*Lanius ludovicianus*).** CDFW Species of Special Concern, USFWS Bird of Conservation Concern. **Moderate Potential.** The loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Nests are usually placed three to ten feet off the ground in trees and large shrubs (Shuford and Gardali 2008).

The project site provides open annual grassland areas with scattered trees and shrubs for foraging and nesting. There are recent observations of this species within 5.0 miles of the project site (eBird 2016).

**Yellow-billed magpie (*Pica nuttalli*).** USFWS Bird of Conservation Concern. **Moderate Potential.** The yellow-billed magpie is endemic to California, occurring year-round in the Central Valley and associated foothills, and the central Coast Ranges. This species inhabits open park-like areas including oak savanna and woodland, the margins of stream courses, and some agricultural areas (e.g., orchards). Breeding typically occurs in loose colonies. The large, dome-shaped nests are placed high in trees, usually oaks, and often in clumps of mistletoe (Koenig and Reynolds 2009). This species is an omnivore and an opportunistic feeder.

The project site provides open annual grassland with trees for nesting; this species has been recently observed in several nearby areas (eBird 2016).

**Nuttall's woodpecker (*Picoides nuttalli*).** USFWS Bird of Conservation Concern. **Moderate Potential.** Nuttall's woodpecker, common in much of its range, is a year-round resident throughout most of California west of the Sierra Nevada. Typical habitat is oak or mixed woodland, and riparian areas (Lowther 2000). Nesting occurs in tree cavities, principally those of oaks and larger riparian trees. Nuttall's woodpecker also occurs in older residential settings and orchards where mature trees provide suitable foraging and nesting habitat. This species forages on a variety of arboreal invertebrates.

Oaks and other trees within the project site provide year-round habitat for this species, including for nesting. There are numerous observations of this species within 1.0 mile of the project site (eBird 2016).

**Western spadefoot (*Spea hammondi*).** CDFW Species of Special Concern. **Moderate Potential.** The western spadefoot (also called "spadefoot toad") ranges throughout California's Central Valley and adjacent foothills. Suitable habitat for this amphibian consists of open areas with sandy or gravelly soils, and includes grassland, scrubland, woodland, washes, and alluvial fans. Spadefoots spend most of the year underground in burrows and similar refugia, and often constructs their own burrows. Breeding occurs in shallow, temporary pools formed by heavy winter rains; at least four weeks of continuous inundation are required for successful larval metamorphosis.



The project site provides open annual grassland with friable soil and gopher burrows. Additionally, seasonal water features (vernal pools and swales) that appear relatively short-lived are also present, and may be used for spadefoot breeding. There are recent documented occurrences of this species within 4.4 miles to the north, at a similar elevation range to that of the project site (CDFW 2017).

**Vernal pool fairy shrimp (*Branchinecta lynchi*). Federal Threatened, CDFW Special-Status Invertebrate. High Potential.** The vernal pool fairy shrimp ("VPFS") was listed in 1994 and is nearly endemic to California. Populations are known from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County; additional distinct populations exist at various other locations, including in the central and southern Coast Ranges. Overall, this species is widespread but generally not abundant in occupied areas. VPFS occurs primarily in vernal pools but is also found in a variety of both natural and artificial temporary wetland habitats including alkali pools, ephemeral drainages, stock ponds, vernal swales, rock outcrop pools, and even roadside ditches (Helm 1997). Occupied features are typically small (ranging from 0.1 to 0.05 acre in size), and pond for a relatively short duration (e.g., as little as 3 to 4 weeks; Eriksen and Belk 1999). Soil types associated with VPFS vary greatly with geography and influence the ecology of the species. Known water quality tolerances are 48 to 481 ppm for salinity, and 6.3 to 8.5 for pH (Eriksen and Belk 1999).

Vernal pools within the project site appear to be relatively small in area and shorter-lived, and thus provide potential habitat for VPFS. Longer-ponding vernal swales also have the potential to be occupied. There are several documented occurrences at a similar elevation range within 5.0 miles to the north (as well as another cluster of occurrences located between approximately 10.5 and 15.5 miles to the southeast; CDFW 2017). For these reasons, VPFS has a high potential to be present within the project site. VPFS have been previously documented in the project site, according to a Corps Public Notice for a previously proposed project, although the source of the occurrence data is not reported (Corps 2000).

**Midvalley fairy shrimp (*Branchinecta mesoallensis*). CDFW Special-status Invertebrate. Moderate Potential.** This relatively recently-described fairy shrimp is endemic to California's Central Valley. It typically occurs in small, grass-bottomed vernal pools and puddles that are highly ephemeral (Eriksen and Belk 1999). Vernal pools and possibly other seasonal aquatic features within the project site provide potential habitat. The nearest documented occurrence is located approximately 11.8 miles northwest of the project site, at a similar elevation range (CDFW 2017).

**Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Federal Threatened, CDFW Special-status Invertebrate. Moderate Potential.** The valley elderberry longhorn beetle ("VELB") was listed in 1980. It is found throughout much of the Central Valley in elderberry shrubs, on which it is completely dependent for larval development, and to a lesser degree, adult feeding. Typical habitat is characterized as large stands of mature elderberry shrubs in riparian or floodplain areas, with a variety of other riparian-affiliated trees and shrubs also present in the canopy.

Elderberry shrubs within the project site are large enough to support VELB. The nearest documented occurrences are within 2.6 miles to the north of the project site (in association with riparian forest along Big Chico Creek), and within 1.0 miles to the south (in association with Butte Creek; CDFW 2017).

**Vernal pool tadpole shrimp (*Lepidurus packardii*). Federal Endangered, CDFW Special-Status Invertebrate. High Potential.** The vernal pool tadpole shrimp ("VPTS") was listed in 1994 and is virtually endemic to the Central Valley, with the majority of known populations occurring in the Sacramento Valley. Like other branchiopod shrimps, VPTS inhabits pools/wetlands that dry down seasonally. Suitable habitats vary considerably and include vernal pools, clay flats, alkaline pools, ephemeral stock ponds, roadside ditches, and deeper road ruts (Rogers 2001, CDFW 2017). Occupied vernal pools may range in size from small, clear, and well-vegetated to highly turbid, alkali scald pools to large winter "lakes" (Rogers 2001). They may be seasonal or ephemeral, and may exhibit a wide range of salinity levels. However, VPTS survival requires that water bodies be deeper than five inches, pond for a minimum of 40 days, and not experience wide daily temperature fluctuations (Rogers 2001). VPTS cysts (resting eggs) must have the opportunity to dry out completely before they can hatch.

Vernal pools and other seasonal aquatic features (e.g., swales) within the project site may support VPTS. Features that tend to have longer average inundation periods and/or deeper water are the most likely to be occupied. There are several documented occurrences within 5.0 miles to the north, the nearest being 0.6 mile away (CDFW 2017). VPTS have been previously documented in the project site, according to a Corps Public Notice for a previously proposed project, although the source of the occurrence data is not reported (Corps 2000).

**California linderiella (*Linderiella occidentalis*). CDFW Special-Status Invertebrate. Moderate Potential.** This fairy shrimp is widely distributed and relatively common in the Central Valley and Coast Ranges (Eriksen and Belk 1999). Linderiellas occur primarily in vernal pools in unplowed grasslands with old alluvial soils, but may also be found in sandstone depressions as well as more turbid, mud-bottomed pools. Occupied features must be continuously inundated for a minimum of 31 days for successful reproduction to occur. This species is relatively tolerant of higher water temperatures. Vernal pools and other seasonal aquatic features within the project site provide potential habitat for California linderiella; the nearest documented occurrences are respectively located 4.6 and 5.2 miles to the north within a similar elevation range to that of the project site (CDFW 2017).

## REGULATORY SETTING

There are a number of federal, state, and local regulations designed to protect biotic resources that are recognized as sensitive or of special importance. The following is a description of those regulations and how they apply to the biotic resources within the proposed project site.

### Federal Regulations

#### *Federal Endangered Species Act of 1973*

The FESA and implementing regulations are codified in the United States Code (16 USC §§ 1531 et. seq.) and the Code of Federal Regulations (CFR) (50 CFR Section 17.1 et. seq.), respectively. These regulations include provisions for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. The FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), (3) prohibitions against "taking" (meaning harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take".

The FESA also addresses recovery plans and the designation of critical habitat for listed species, defined as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS and/or NOAA Fisheries Service to protect listed species and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the FESA "jeopardy standard." However, areas that are currently unoccupied by the species but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

Project Applicability: A federally endangered plant, Butte County meadowfoam, occurs on the project site and is protected by the FESA. The recovery criteria identified in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (2005) are to protect 100 percent of all known occurrences of the species and to protect 95 percent of suitable habitat within the Chico region. With regard to critical habitat, the project site was not included in the areas designated critical habitat for Butte County meadowfoam, last updated in 2008. The project includes creation of an on-site preserve (approximately 108 acres), that would maintain the occurrence of Butte County meadowfoam at the site, however the proposed development would result in take of this species and loss of suitable habitat.

*Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act*

The federal Migratory Bird Treaty Act (“MBTA”) (16 U.S.C. 703 et. seq.), and implementing regulations, title 50 CFR Parts 20 and 21, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term “take” is defined as meaning, “to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires.” With a few exceptions, most birds are considered migratory under the MBTA. In the absence of a permit, disturbances that causes nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend may violate the MBTA.

The Bald Eagle Protection Act (16 USC 668) was passed in 1940 to protect bald eagles and was later amended to include golden eagles. Under the Act it is unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing eagles.

Project Applicability: The vast majority of birds found on the project site are protected under the MBTA and by the CFGC. The project has the potential to take nests, eggs, young or individuals of these protected species. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests.

*Clean Water Act Section 404 & 401*

The Corps and the U.S. EPA regulate the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the CWA (33 USC 1344). Waters of the U.S. are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Under a Memorandum of Agreement between the Corps and the U.S. EPA, the U.S. EPA may request that certain Section 404 permit applications receive a higher level of review within the Department of Army. In these cases, the U.S. EPA determines that issuance of the permit will result in unacceptable adverse effects to Aquatic Resources of National Importance (ARNI). An ARNI is a resource-based threshold based on factors such as economic importance of the

aquatic resource, rarity or uniqueness, and/or importance of the aquatic resources to the protection, maintenance, or enhancement of the quality of the Nation's waters.

Section 401 of the CWA (33 USC 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a water quality certification from the state in which the discharge originates. The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (State Water Board) and its nine RWQCBs.

Project Applicability: The project site contains approximately 20.25 acres of Waters of the U.S. subject to the jurisdiction of the Corps pursuant to Section 404 of the CWA. In a letter dated December 4, 2000 regarding a previously proposed development at the project site, the U.S. Fish and Wildlife Service (USFWS) determined that the aquatic features located on the project site constitute ARNIs, thus the proposed project will require a higher level of review within the Department of Army. An additional 1.66 acres (for a total of 21.91 acres) are potential Waters of the State subject to the jurisdiction of the RWQCB pursuant to Section 401 of the CWA and the Porter Cologne Act. These areas are based on a wetland delineation conducted by WRA in May of 2016 and a jurisdictional determination made by the Corps in July of 2017. Any impacts to Waters of the U.S. and State will require Corps and RWQCB authorization.

## **State Regulations**

### *California Endangered Species Act*

California enacted the California Native Plant Protection Act (NPPA) in 1977 and the CESA in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the CFCG Code. To align with the FESA, CESA created the categories of "threatened" and "endangered" species. It converted the classification of all "rare" animals into the CESA as threatened species, but did not do so for rare plants. These laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. CDFW implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the CNDDDB, a computerized inventory of information on the general location and status of California's rarest plants, animals, and natural communities.

Project Applicability: As noted previously, Butte County meadowfoam occurs on the project site. This plant is state endangered and protected by the CESA. The project has the potential to result in take of this species and loss of suitable habitat.

### *The Natural Community Conservation Planning Act*

The Natural Community Conservation Planning (NCCP) Act of 1991 represents an unprecedented effort by the State of California, and numerous private and public partners, to broaden its orientation and objectives beyond those of the CESA and FESA. The primary

objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

Project Applicability: See results for CESA and FESA, above.

#### *Fully Protected Species & Species of Special Concern*

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. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with "fully protected" species states that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species,"<sup>1</sup> although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

"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 historically occurred in low numbers and known threats to their persistence currently exist. These designations are intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and are intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. These designations are also 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. Although these species generally have no special legal status, they are given special consideration during project review.

Project Applicability: White-tailed kite is a CDFW fully protected species that has been observed at the project site.

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<sup>1</sup> California Department of Fish and Wildlife (CDFW) (2003). *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database Wildlife and Habitat Data Analysis Branch. Vegetation Classification and Mapping Program, Sacramento, CA.*

*California Fish and Game Code Sections 3503 & 3513*

According to Section 3503 of the CFGC it is generally unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW.

Project Applicability: As stated above under the MBTA description, the vast majority of birds found on the project site are protected under the MBTA and the CFGC.

*Other Sensitive Plants - California Native Plant Society*

CNPS, a non-profit plant conservation organization, publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version ([www.cnps.org/rareplants/inventory/](http://www.cnps.org/rareplants/inventory/)). The Inventory assigns plants to the following categories:

- Rank 1A – Presumed extinct in California;
- Rank 1B – Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: – Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: – Rare, threatened, or endangered in California, but more common elsewhere;
- Rank 3 – Plants for which more information is needed – A review list; and
- Rank 4 – Plants of limited distribution – A watch list.

Additional threat ranks are assigned to each taxon or group as follows:

- .1 – Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).
- .2 – Fairly endangered in California (20-80% occurrences threatened).
- .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known).

Plants on Rank 1A, 1B, 2A, 2B of the CNPS Inventory consist of plants that may qualify for listing, and the CDFW, as well as other state agencies (e.g., California Department of Forestry and Fire Protection), and the CNPS recommends these plants be given special consideration during project review. In addition, the CDFW and CNPS recommend, and local governments may require, consideration of plants on List 3 and 4 during project review.

Project Applicability: Forty plant species listed by the CNPS have been documented in the vicinity of the project site; however, the majority of these species are unlikely to occur within the project site. Of the forty species, one species is present within the project site (Butte County meadowfoam) and eleven species have a moderate or high potential to occur onsite.



*Porter-Cologne Water Quality Control Act*

“Waters of the State” are defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The State Water Resources Control Board and the nine RWQCBs protect all state and federal waters. For projects that require a Corps (§ 404) permit for a proposed discharge of dredged or fill material, the applicable RWQCB is required to issue a certification under the Section 401 of the CWA that the discharge will not violate state water quality standards.

Project Applicability: As discussed above, the project site contains 21.91 acres of potential Waters of the State subject to the jurisdiction of the RWQCB pursuant to Section 401 of the CWA and the Porter-Cologne Act. The actual extent of Waters of the State may vary depending on the results of a jurisdictional determination to be conducted by the Corps. Any impacts to Waters of the State will require RWQCB authorization.

*California Fish and Game Code Section 1600*

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to CDFW jurisdiction under Section 1602 of the CFGC. A 1602 Lake and Streambed Alteration Agreement is generally required for any activity that will have one or more of the following effects: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. The term “stream”, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life”. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.<sup>2</sup> Riparian is defined as “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself”.<sup>3</sup> Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

Project Applicability: Approximately 8.86 acres of the project site, including intermittent streams, non-wetland swales, and riparian woodland communities, are potentially subject to CDFW

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<sup>2</sup> California Department of Fish and Wildlife, Environmental Services Division (CDFW ESD) (1994). *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Wildlife Code.* Sacramento, CA.

<sup>3</sup> *Ibid.*

jurisdiction under Section 1600 of the CFGC. Any impacts to these areas will require a Streambed Alteration Agreement from CDFW.

### *Sensitive Vegetation Communities*

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations. The CDFW ranks sensitive communities as 'threatened' or 'very threatened' and keeps records of their occurrences in the CNDDDB. Sensitive plant communities are also identified by CDFW on their List of California Natural Communities Recognized by the CNDDDB. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations, or by the CDFW or the USFWS must be considered and evaluated under the CEQA.

Project Applicability: The CNDDDB (2011) lists four sensitive habitat types as occurring within the vicinity of the project site: valley needlegrass grassland, serpentine bunchgrass, Northern maritime chaparral, and Northern coastal salt marsh. None of these habitat types are present within the project site. In addition, upon review of the CDFW list of sensitive plant communities (2009) none of the community types are state or globally imperiled. However, the statewide loss of riparian, wetland, and aquatic habitat types has been significant and further discussion of these habitat types occurs below.

### **Local Regulations**

#### *Butte Regional Conservation Plan*

The Butte County Association of Governments initiated development of the Butte Regional Conservation Plan (BRCP) in 2007, which has not yet been formally approved or implemented. The proposed BRCP would function as a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) with the goal of streamlining state and federal environmental permitting for covered activities. The Plan Area for the proposed BRCP includes approximately 560,000 acres in the western half of Butte County, and includes the entire extent of vernal pool landscapes within Butte County. The BRCP would include 38 covered species, including Butte County meadowfoam, valley elderberry longhorn beetle, vernal pool fairy shrimp, western spadefoot, and white-tailed kite, among others. The BRCP would allow for the removal of approximately 24,500 acres of habitat under federal and state permits, and would protect and restore 90,417 acres.

Since 2007, the development of the BRCP has been coordinated with numerous individuals, groups, and entities including 47 meetings with the BRCP stakeholder committee, numerous meetings with state and federal agency staff, city and county planning and public works staff, and special interest groups throughout the Plan Area. The first administrative draft of the BRCP was completed and reviewed by the stakeholder committee and wildlife agencies, and made

available on the BRCP website in June 2011. A “preliminary public draft” of the BRCP was released in December 2012 and a “formal public draft” was completed and submitted to the U.S. USFWS in July 2015. In June 2016, following a public comment period for the environmental review documents, it was announced that the draft BRCP would undergo substantial revisions with the goal of building consensus among the various permittees and stakeholders in the Plan area. Development of a final BRCP is currently pending.

Project Applicability: In a letter dated March 16, 2017, Butte County Association of Governments staff advised City staff that: “A revised draft of the BRCP is currently under development and is expected to include the removal of the project listed above [Vesting Tentative Subdivision Map S 15-05 and GPA/RZ 15-02 (Stonegate)] from the BRCP permit area. This change will eliminate any conflict between the BRCP and the project, and will allow the project to move forward separately via the existing state and federal permitting processes. As such, there are no expected conflicts between the project and the BRCP.” Therefore, for the purposes of this EIR it is assumed that the proposed project would not be subject to the policies listed within the Draft BRCP.

#### *City of Chico General Plan*

The Chico 2030 General Plan establishes the following goals, policies, and actions relevant to biological resources:

#### **Goal OS-1: Protect and conserve native species and habitats.**

Policy OS-1.1 (Native Habitats and Species): 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.

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.

The General Plan identifies a Resource Constraint Overlay that encompasses the project site. 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.

Project Applicability: The project is subject to an evaluation of consistency with the City of Chico General Plan.

*City of Chico Municipal Code*

The City of Chico municipal code requires that a permit be obtained prior to removing any tree from any property. Tree removal permits are issued upon consideration of the overall condition and health of the tree, proximity to existing or proposed structures, interference with utility services, the necessity to remove the tree, feasible alternatives, the effect of tree removal on erosion, soil retention, and diversion or increased stream flow. Tree replacement requirements may be met onsite or in the form of an in-lieu fee payment.

The City of Chico municipal code requires a minimum 25-foot setback from the top of creek banks to development and associated above-ground infrastructure as a part of project review. Larger setbacks may be necessary to mitigate environmental impacts.

Project Applicability: The project is subject to the City of Chico municipal code, including tree removal and creek setback requirements.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction and operation of the proposed project. The project would have a number of impacts on the area's biological resources, which may constitute significant adverse effects. CEQA and the CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under CEQA Guidelines section 15065, a project's effects on biotic resources are deemed significant where the project would:

- "substantially reduce the habitat of a fish or wildlife species"
- "cause a fish or wildlife population to drop below self-sustaining levels"
- "threaten to eliminate a plant or animal community"
- "substantially reduce the number or restrict the range of an endangered, rare or threatened species"

In addition to the section 15065 criteria that trigger mandatory findings of significance, Appendix G of the CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the 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 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 federally protected wetlands as defined by Section 404 of the CWA?
- 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?

This section describes the assumptions and thresholds of significance developed to evaluate impacts on the biological resources of the project site that would result from the proposed project. Two general assumptions that influence the assessment of impacts to the project site's biotic resources are as follows:

1. Direct impacts to plant and wildlife species are assumed to be correlated with the loss of habitats with which these species are associated. These losses would result from site excavation, grading, filling, infrastructure construction, or other damage to habitats such that they can no longer sustain a species, or so that the number of individuals that they sustain is reduced, and direct loss due to death or injury or disturbance by construction activities and human uses to the extent that the species cannot continue their lifecycle activities. The conversion of these natural communities to structures, landscaping, and infrastructure may therefore result in the loss of or reduction of use for some plant and animal species. The existing species are usually eliminated, but may be replaced with a suite of species that tolerate these development activities, but may not be as desirable, if suitable habitat is still available. Removal of a sensitive habitat, such as wetlands, that is replaced by the development would be a permanent, direct impact. Direct impacts may also be temporary if they disturb a habitat that is subsequently restored or displace individuals of a given species that later return to the site.
2. Indirect impacts could also occur. If remaining fragments of undeveloped habitat are isolated from larger areas of contiguous habitat, the remaining habitats are expected to have lower biological values than those prevailing before development. Some species can no longer subsist in these smaller fragments, the fragments may be heavily influenced by surrounding stressors, or species may not reproduce successfully without exchange with other populations. Indirect impacts can occur in portions of the site not directly impacted, or to off-site habitats and species, due to such factors as degraded water quality; changes in hydrology; noise or dust from transport of soil or materials; disturbance of wildlife from human activities and domestic animals; predation by domestic and urban-adapted species; competition by introduced plant species; and other factors.

## Project Impacts and Mitigation Measures

### *Impact BIO-1 Special-Status Wildlife Species*

#### *Impact BIO-1A: Impacts to Special-Status and Nesting Bird Species*

The proposed project has the potential to significantly impact nesting birds documented to occur near the project site, including: white-tailed kite (observed during the April 23, April 24, and May 18, 2016 site visits), grasshopper sparrow, oak titmouse, loggerhead shrike, yellow-billed magpie, Nuttall's woodpecker, and non-special-status birds protected by MBTA and CFGC (CDFW 2017, USFWS 2016). Impacts may occur by modifying nesting habitat or by causing disturbance of a sufficient level to cause abandonment of an active nest. As stated above, the majority of the project site is comprised of annual grasslands, which serves as either foraging or nesting habitat for both special-status and non-special-status nesting birds. Approximately 180.48 acres of annual grasslands would be directly impacted by project activities. In addition to these annual grasslands, both the riparian oak woodland and mixed riparian woodland provide foraging and nesting habitat for special-status and non-special-status nesting birds. The proposed project would directly impact approximately 0.02 acres and indirectly 1.08 acres of mixed riparian woodland. Impacts to these species and their habitats would occur during the removal of vegetation or other major ground disturbance (i.e. via heavy machinery). These activities have the potential to result in the direct removal or destruction of active nests, as well as generate indirect impacts from audible, vibratory and/or visual disturbances that may result in nest abandonment.

The direct removal or destruction of active nests due to project activities, or disturbance to breeding birds sufficient to result in the abandonment of active nests are considered potentially significant impacts under CEQA. Implementation of *Mitigation Measure BIO-1A* would reduce potentially significant impacts to nesting birds to a less than significant level.

#### *Mitigation Measure BIO-1A:*

Prior to the issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to nesting birds, including white-tailed kite, grasshopper sparrow, oak titmouse, loggerhead shrike, yellow-billed magpie, Nuttall's woodpecker, and other nesting bird species protected by the MBTA and CFGC.

- If ground disturbance or vegetation removal is initiated in the non-breeding season (August 16 through January 31), no pre-construction surveys for nesting birds are required and no adverse impact to nesting birds would result.
- If ground disturbance or removal of vegetation is initiated during the breeding bird season (February 1 through August 15), pre-construction surveys shall be performed by a qualified biologist no more than 14 days prior to commencement of ground disturbing activities to determine the presence and location of nesting bird species within and adjacent to the proposed project footprint. The results of the survey shall be compiled



into a report and submitted to the City for review and approval prior implementation of the following measures if nesting birds are present:

- If active nests are present, temporary no-work buffers shall be placed around active nests to prevent adverse impacts to nesting birds. Appropriate buffer distance shall be determined by a qualified biologist and is dependent on species and subsequent foraging requirements, legal status of species, surrounding vegetation, and topography. Typical buffer distances vary from 25 feet for common passerines to 500 feet for larger raptors and/or CDFW fully protected species. Work may continue within the buffer area once an active nest becomes inactive due to natural causes (i.e. young fledging the nest, the nest being otherwise depredated, etc.) and no adverse impact to birds would result from the proposed project.

#### *Impact BIO-1B: Impacts to Pallid Bat*

The project site contains riparian oak woodland near the RS-20 lots with trees with foliage and cavities that may provide sufficient roost habitat to pallid bat. Development of the RS-20 lots would result in direct impacts to 0.02 acre of riparian oak woodland and 1.08 acres of indirect impacts, which may provide pallid bat habitat, though no trees are proposed for removal. However, indirect impacts to pallid bats and pallid bat roost habitats may occur during construction activities from audible, vibratory and/or visual disturbances that cause maternity roosting bats to abandon their roost site.

Activities that result in the disturbance to maternity roosting bats sufficient to result in the abandonment of the roost are considered potentially significant impacts under CEQA. Implementation of *Mitigation Measure BIO-1B* for impacts to pallid bat would reduce potentially significant impacts to a less than significant level.

#### *Mitigation Measure BIO-1B:*

Prior to the issuance of a grading permit associated with the RS-20 lots east of the Diversion Channel, the Applicant shall implement the following measures to reduce impacts to pallid bat:

- Pre-construction roost assessment survey: A qualified biologist shall conduct a roost assessment survey of trees located within the project site. The survey shall assess use of the trees and cavities for roosting as well as potential presence of bats. If the biologist finds no evidence of bat roosting, no further measures are recommended. The results of the survey shall be compiled into a report and submitted to the City for review and approval prior implementation of the following measures if evidence of bat roosting is present:
- Work activities outside the maternity roosting season: If evidence of bat roosting is discovered during the pre-construction roost assessment and construction activities are planned August 1 through February 28 (outside the bat maternity roosting season), a qualified biologist shall implement passive exclusion measures to prevent bats from re-

entering the tree cavities. After sufficient time to allow bats to escape and a follow-up survey to determine that bats have vacated the roost, construction activities may continue and impacts to special-status bat species would be avoided.

- Work activities during the maternity roosting season: If a pre-construction roost assessment discovers evidence of bat roosting in the trees during the maternity roosting season (March 1 through July 31), and determines maternity roosting bats are present, a no disturbance shall be established around these roost sites until they are determined to be no longer active by the qualified biologist. The size of the no distance buffer shall be determined by the qualified bat biologist in coordination with CDFW and would depend on existing screening around the roost site (such as dense vegetation), the roost type, species present, as well as the type of construction activity which would occur around the roost site.

#### *Impact BIO-1C: Impacts to Western Spadefoot*

Western spadefoot has a moderate potential to occur within the project site and has potential to be significantly impacted through disturbance and/or removal of aquatic habitat including vernal pools, seasonal wetlands, drainages, and/or upland habitat (i.e., mammal burrows and similar refugia within annual grassland and riparian woodland). Activities resulting in the injury and/or mortality of western spadefoot would be considered a potentially significant impact under CEQA. The proposed project would result in 9.35 acres of direct impacts to aquatic resources and 4.51 acres of indirect impacts on the project site that may serve as habitat for western spadefoot. However, implementation of *Mitigation Measure BIO-1C* for impacts to western spadefoot would reduce potentially significant impacts to a less than significant level.

#### *Mitigation Measure BIO-1C:*

Prior to issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to western spadefoot:

- Prior to initial ground disturbance, a pre-construction presence/absence survey shall be conducted by a qualified biologist using appropriate site-specific methodology (e.g., visual surveys for adult spadefoots during or immediately following the first heavy rains of the fall/winter period). A qualified biologist may also survey aquatic habitat for breeding adults, eggs, and/or larvae. If western spadefoot is not present, impacts to this species would be avoided. The results of the survey shall be compiled into a report and submitted to the City for review and approval prior implementation of the following measures if western spadefoot is present:
- If western spadefoots individuals are found within or adjacent to the Study Area, the Applicant shall retain a qualified biologist to consult with CDFW to determine appropriate mitigation for impacts to western spadefoot habitat and individuals.

- In addition to consultation with CDFW, construction activities shall take place during the dry season (generally June 1 through September 30) within two kilometers of aquatic habitats. If construction activities extend into the wet season (generally October 1 through May 31), temporary exclusion fencing shall be installed 100 feet from work areas to prevent western spadefoot from entering construction areas. In addition, the following BMPs shall be implemented during construction:
  - Escape ramps shall be installed in all trenches or excavations to allow western spadefoot to escape.
  - Biological monitoring shall be provided by an agency-approved biologist during construction in all areas within two kilometers of aquatic habitats. The biological monitor shall identify, capture, and relocate western spadefoot present in the work area to a pre-approved location, if necessary.
  - Water quality of western spadefoot habitat shall be maintained through implementation of appropriate erosion-control measures to reduce siltation and contaminated runoff from the project by maintaining vegetation within buffers and/or through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.
- In addition, the proposed project shall be required to mitigate for impacts to 9.35 acres (Direct impacts) and 4.51 acres (Indirect Impacts) of aquatic resources that shall result in the creation, preservation, restoration, or purchase of mitigation bank credits for wetlands (see *Mitigation Measure BIO-4* below).

*Impact BIO-1D: Special-Status Vernal Pool Crustaceans*

The proposed Project would impact vernal pools and other aquatic resources with the potential to support vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley fairy shrimp, and California linderiella. The proposed project would result in direct impacts to 9.35 acres and 4.51 acres of indirect impacts of aquatic resources on the project site. If the City declines the proposed one-acre Land Transfer (see Project Description page III-19), then an additional 0.16 acres of wetlands would be impacted by the project. Project activities within these habitats may cause mortality and/or other adverse impacts to populations of vernal pool crustaceans present within the Study Area. Activities resulting in injury and/or mortality of special-status vernal pool crustaceans would be considered a potentially significant impact under CEQA. *Mitigation Measure BIO-1D* for impacts to vernal pool crustaceans is discussed below. With implementation of *Mitigation Measure BIO-1D*, potentially significant impacts to special-status vernal pool crustaceans would be reduced to less than significant after mitigation.

*Mitigation Measure BIO-1D:*

Prior to issuance of a grading permit, the Applicant shall implement the following measures to reduce impacts to special-status vernal pool crustaceans:

- Unless a protocol-level presence/absence survey prepared by a qualified biologist demonstrates a lesser amount of occupied habitat within the development area, it shall be assumed that the project will result in the loss of 9.35 acres of occupied special-status vernal pool crustacean habitat.
- If VPFS and/or VPTS are either presumed present or determined by surveys to be present, and avoidance is not feasible, then impacts to their habitat shall be mitigated at a 2:1 ratio (two acres mitigated for every one acre lost) through preservation, restoration, and/or creation of suitable vernal pool crustacean habitat or purchase of vernal pool mitigation bank credits. However, final habitat acreages, mitigation ratios and other project-specific compensatory requirements shall be determined through consultation between USFWS and the Corps as part of the Section 404 permitting process.

*Impact BIO-1E: Impacts to Valley Elderberry Longhorn Beetle*

The proposed utility crossing from Street A to the RS-20 lots on the easterly side of the project site would directly impact 0.02 acre and indirectly impact 1.08 acre of mixed riparian woodland that contains elderberry habitat suitable for VELB. Indirect impacts to VELB may occur at the habitat-level through a variety of proposed Project-related activities such as trimming elderberry shrubs, which may reduce the health and vigor of the shrub, and may remove or destroy VELB eggs and/or larvae. Direct impacts may occur through the removal of elderberry shrubs with VELB present. Activities resulting in injury and/or mortality of VELB would be considered a potentially significant impact under CEQA. *Mitigation Measure BIO-1E* for impacts to VELB is discussed below. With implementation of *Mitigation Measure BIO-1E*, potentially significant impacts to VELB would be reduced to a less than significant level.

*Mitigation Measure BIO-1E:*

Prior to the issuance of improvement plans or grading permits for the extension of utilities from Street A to serve the RS-20 lots located east of the Diversion Channel, the Applicant shall implement the following to avoid impacts to VELB (adapted from USFWS 2017):

- Avoidance and Minimization: To the extent feasible, project activities within 165 feet of elderberry shrubs shall be avoided. For all activities that occur within 165 feet of elderberry shrubs, the following measures shall be implemented to ensure that avoidance activities completely avoid impacting elderberry shrub habitat for VELB:
  - Fencing: All areas to be avoided during project activities shall be fenced and/or flagged near project activity limits.

- Avoidance area: Trenching, paving, or similar activities that may damage or kill elderberry shrubs shall have an avoidance area of at least 20 feet from the drip-line of the shrub.
- 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 non-compliance.
- Construction monitoring: A qualified biologist shall monitor the project at appropriate intervals to ensure all avoidance and minimization measures are implemented.
- Timing: As feasible, all activities that would occur within 165 feet of an elderberry shrub shall be conducted outside of VELB flight season (March - July).
- Trimming: Trimming of elderberry shrubs shall occur between November and February and shall avoid removing any branches or stems that are  $\geq 1$  inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established in consultation with the Service.
- Chemical Usage: Herbicides shall not be used within the drip-line of an elderberry shrub. Insecticides shall not be used within 98 feet of an elderberry shrub. All chemicals shall be applied using a backpack sprayer or similar direct application method.
- Mowing: Mechanical weed removal within the drip-line of an elderberry shrub shall be limited to the season when adults are not active (August - February) and shall avoid damaging the elderberry shrub.
- Transplanting: Where elderberry shrubs cannot be avoided or indirect impacts nearby will result in the death of stems or entire shrubs, the Applicant shall transplant all elderberry shrubs with stems greater than 1 inch in diameter, where feasible, to protect VELB larvae. In addition, the Applicant shall use the following guidelines when transplanting elderberry shrubs to a USFWS-approved location:
  - Monitor: A qualified biologist shall be on-site for the duration of transplanting activities to ensure compliance with avoidance and minimization measures, in addition to other conservation measures.
  - Exit holes: Exit-hole surveys shall be completed immediately before transplanting. Details of the survey including number of exit holes observed, the GPS location of the plant to be transplanted, and the GPS location of the final position of the transplanted shrub shall be recorded and reported to the Service and to CNDDDB.
  - Timing: Elderberry shrubs shall be transplanted while shrubs are dormant (from November through the first two weeks in February) and after shrubs have lost their leaves to reduce shock to the shrub and increase transplantation success.

- Transplanting Procedure: Transplanting shall follow the most current version of ANSI A300 (Part 6) guidelines for transplanting.
- Trimming Procedure: Any trimming of elderberry shrubs shall occur between November and February and should minimize removal of branches and/or stems that exceed one (1) inch in diameter.

#### *Impact BIO-2: Special-Status Plant Species*

##### *Impact BIO-2A: Impacts to Butte County Meadowfoam and Shield-bracted Monkeyflower*

According to Rare Plant Surveys conducted for the proposed project (Appendix D-3), approximately 5.14 acres of occupied Butte County meadowfoam (BCM) habitat, were observed in annual grasslands and along the fringes of a few vernal pool and swale features in the project site. Although approximately one-half of the occupied BCM habitat (2.57 acres) occurs within the on-site open space preserve, approximately 2.33 acres of occupied BCM habitat is located within the proposed development footprint. Of the 2.33 acres that would be directly impacted, 1.13 acres is located west of the Diversion Channel and 1.20 acres coincide with the RS-20 lots located east of the Diversion Channel.

Shield-bracted monkeyflower individuals were observed on the project site, however, all of these individuals were found well outside of the project development footprint and would be avoided. The proposed project would directly impact federal and state endangered Butte County meadowfoam present within the development footprint through removal of individuals.

Indirect impacts could also occur to occupied BCM habitat located within the 108 acre on-site preserve as a result of changes in hydrology from development. The USFWS has in the past used a 250-foot buffer as a starting point for determining potential indirect impacts to vernal pool-dependent species from nearby development. Alternatively, a site-specific hydrologic analysis can be used to justify a smaller buffer from the edge of the development footprint. The topography shown on the tentative map indicates that most of the storm water runoff within on-site open space preserve area drains toward the Butte Creek Diversion Channel, however no detailed hydrologic analysis has been provided to justify using a buffer of less than 250 feet for determining potential indirect impacts to vernal pool habitat within the preserve. One exception exists, where the presence of the Butte Creek Diversion Channel and levee clearly establish a hydrologic separation between biological resources located east of the channel and development areas west of the channel. Therefore, using a default 250-foot buffer, potential indirect impacts to BCM could be 0.09 acres on the west side of the Diversion Channel and 0.15 acres associated with development of the RS-20 lots on the east side of the Diversion Channel.

Activities resulting in damage to individual plants or populations of BCM would be potentially significant impacts under CEQA unless mitigated to: (1) avoid a net loss of occupied habitat, or (2) provide a 19:1 ratio of preserved occupied habitat relative to the occupied habitat that would be directly impacted by the project and a 5:1 ratio of the same for indirect impacts. The applicant proposes to include the 15-acre Doe Mill-Schmidbauer Meadowfoam Preserve

(discussed on page IV.D-2, above) as part of the long-term management plan for the 108-acre Stonegate preserve, providing an active management regime for both preserve areas. The applicant also proposes to conduct on-site restoration BCM habitat within the combined preserve areas using seed stock from occupied BCM habitat impacted by the project. On-site restoration of BCM habitat is preferable to off-site preservation because it avoids an overall reduction in occupied habitat for the species and increases the potential long-term success of healthy BCM populations at the site.

Any restoration efforts would have to be carefully crafted and negotiated with State and Federal Trustee agencies (CDFW and USFWS). It is the intent of *Mitigation Measure BIO-2A*, below, to effectively mitigate for impacts to BCM habitat while also providing flexibility for on-site restoration and/or creation efforts. Implementation of *Mitigation Measure BIO-2A* would reduce impacts to special-status plant species through compensatory mitigation to a less than significant level.

*Mitigation Measure BIO-2A:*

Prior to the issuance of a grading permit, the Applicant shall consult with both the USFWS and the CDFW to obtain authorization for project implementation and develop appropriate type and amount of compensatory mitigation for project impacts to Butte County meadowfoam (BCM) occupied habitat.

To compensate for project impacts to occupied BCM habitat the Applicant shall:

- (1) Preserve and enhance BCM habitat within the on-site preserve areas pursuant to a habitat mitigation and monitoring plan approved by the USFWS and the CDFW at a minimum 1:1 ratio for temporary impacts (1.0 acres enhanced over pre-project conditions for every one acre of temporarily impacted habitat). Enhancement activities will be detailed in the habitat mitigation and monitoring plan and will include vegetation management for non-native, annual grasses. In addition, in areas not previously documented to support BCM, but which consist of the same mapped soils association, BCM habitat will be created through a site-specific restoration plan to mitigate at a 1.5:1 ratio for permanent impacts (1.5 acres created over pre-project conditions for every one acre of permanently impacted habitat). Because successful creation of the microhabitat required by BCM cannot be guaranteed, a performance bond shall be established prior to restoration activities taking place, to purchase BCM credits at an approved mitigation bank at ratios outlined in (2). Creation of BCM habitat will consist of scraping topsoil to mimic the soil depth suitable for BCM (~4-6 inch depth of soil over bedrock) adjacent to swale habitat. Topsoil from known locations of BCM in the impact area will be salvaged and transplanted to these created areas and observed for three years. Performance will be met only when density of BCM in created habitat matches reference population density in preserved habitat. The success of the on-site preserve for BCM habitat (enhancement and creation) shall be documented with before-and-after protocol-level, floristic, rare plant surveys that compare pre-project baseline BCM acreage and stem counts to post-restoration BCM acreage and stem counts. The plan shall

detail methods, locations, and goals for re-locating soils from impacted areas to the preserve, and include contingency measures that address the potential that creation efforts could fall short of stated goals (including a performance bond posted by the Applicant during the restoration period matching the funding required to purchase credits at a 19:1 ratio); or,

- (2) Preserve habitat for BCM at a 19:1 ratio (19 acres of preservation for every one acre impacted) for direct impacts and at a 5:1 ratio (five acres of preservation for every one acre impacted) for indirect impacts. However, final habitat acreages, mitigation ratios, and other project-specific compensatory requirements for direct and indirect impacts shall be finalized during consultation between USFWS and the Corps as part of the Section 404 permitting process. This compensatory mitigation may include one or a combination of the following options:

- Purchase BCM credits from an approved mitigation bank within the service area. The actual fee paid shall be that in effect at the time of payment.
- Preserve and enhance BCM habitat at an existing site where long-term protections encumbering the property are currently not in place. This would likely include habitat within the 108 acre on-site open space preserve as well as the adjacent 14.76 acre Doe Mill-Schmidbauer Preserve (APN 018-510-002), which was dedicated to the City by the owner of the Stonegate project in 1989 in anticipation of mitigation requirements for a previous project that did not move forward at that time. This option would require the preparation of a long-term management plan, subject to approval by USFWS and the City, prior to the start of construction, along with an endowment for the long-term management of the property and a USFWS-approved conservation easement to ensure that the population of BCM is protected in perpetuity.

Final habitat acreages, mitigation ratios, and other project-specific compensatory requirements shall be determined through consultation between USFWS and the Corps as part of the Section 404 permitting process. The exact cost to purchase preservation credits for project-related impacts shall be determined at the time of purchase. Mitigation credits shall be purchased and/or a conservation area and management plan shall be established prior to any grading or other ground-disturbing activities on the project site. Consultation shall also include requesting a consistency determination from CDFW concerning Butte County meadowfoam.



*Impact BIO-2B: Invasive Weeds from Project Development*

Clearing, grading and other site disturbance associated with developing the project near the on-site preserve could introduce invasive species that then migrate into the preserve and degrade the value of habitat for existing and potential special-status plants and animals. Implementation of *Mitigation Measure BIO-2B* would require the Applicant to establish a weed control program prior to construction, thereby minimizing the potential for habitat degradation as a result of construction activities and reducing this impact to a less-than-significant level.

*Mitigation Measure BIO-2B:*

Prior to the issuance of a grading permit, the Applicant shall prepare a Weed Control Plan for review and approval by the City. Prior to the start of construction activities, the Applicant shall implement a comprehensive, adaptive Weed Control Plan for pre-construction and construction invasive weed abatement. The long-term Weed Control Plan, shall include, but is not limited to, the following:

- A pre-construction weed inventory shall be conducted by surveying all areas subject to ground-disturbing activity, including but not limited, to staging areas, access roads, and areas subject to grading.
- Weed populations that (1) are rated High or Moderate for negative ecological impact in the California Invasive Plant Database (Cal-IPC) and (2) aid and promote the spread of wildfires (such as cheatgrass, Saharan mustard, and medusa head) shall be mapped and described according to density and area covered.
- In areas subject to ground disturbance, weed infestations shall be treated prior to construction according to control methods and practices for invasive weed populations.
- The Weed Control Plan shall be updated and utilized for eradication and monitoring post-construction.
- Weed control treatments shall include all legally permitted herbicide, manual, and mechanical methods. The application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor and implemented by a Licensed Qualified Applicator.
- The timing of weed control treatment shall be determined for each plant species in consultation with USFWS with the goal of controlling populations before they start producing seeds.
- Surveying and monitoring of the identified and treated populations shall be required at all sites impacted by construction and shall occur annually for years one to five and bi-annually for years six to ten.

- During project preconstruction and construction, vehicles and all equipment shall be washed (including wheels, undercarriages, and bumpers) prior to commencing work in off road areas.

*Impact BIO-3: Have a Substantial Adverse Effect on any Riparian Habitat or Other Sensitive Natural Community*

*Impact BIO-3A: Disturbance to Riparian Habitat*

Riparian habitat associated with the Butte Creek Diversion Channel and associated tributaries is present on the site, and portions of the Mixed Riparian Woodland are located within the project footprint. The proposed utility crossing from Street A to the RS-20 lots on the easterly side of the project would directly impact approximately 0.02 acre of Mixed Riparian Woodland. The proposed project would also indirectly impact approximately 1.08 acre of Mixed Riparian Woodland as well as 0.56 acre of Riparian Oak Woodland. As stated in the Regulatory Setting above, the City of Chico municipal code requires a minimum 25-foot setback from the top of creek banks to development and associated above-ground infrastructure as a part of project review. The vast majority of the proposed project would be located outside of the 25-foot setback from the top of creek banks. Minimizing areas of disturbance and restoring the 0.02 acre of affected Mixed Riparian Woodland through implementation of *Mitigation Measures BIO-3A* and *BIO-4* would reduce these potentially significant impacts to less than significant levels.

*Mitigation Measure BIO-3A:*

Prior to issuance of a grading permit for the RS-20 lots located east of the Diversion Channel, the Applicant shall implement the following measures to reduce impacts to riparian habitat:

The Applicant shall restore riparian habitat at a minimum ratio of 1:1 for temporary loss and 3:1 for permanent loss. For the current anticipated temporary loss of riparian habitat, the restoration amount shall be 0.02 acre. Restoration shall occur within the temporarily disturbed area in order to return the temporary impact area to pre-construction conditions. In addition, silt fencing or other appropriate erosion control BMPs shall be installed down grade of construction activities to minimize the transport of sediments. Other water quality protection measures shall be implemented to reduce impacts to riparian habitat including:

- Prior to construction, the contractor shall be required to prepare an Accidental Spill Prevention and Cleanup Plan. This plan shall include required spill control absorbent material, for use beneath stationary equipment, to be present on-site and available at all times.
- To minimize fluid leaks during operation, refueling, and maintenance of stationary equipment spill control absorbent material shall be in place underneath this equipment at all times to capture potential leaks.

- All stockpiling of construction materials, equipment, and supplies, including storage of chemicals, refueling and maintenance, shall occur outside the Butte Creek diversion channel. No equipment shall be washed where runoff could enter the channel.
- All refueling and maintenance of equipment, other than stationary equipment, shall occur outside the channel's top-of-bank. Receptacles containing fuel, oil, or any other substance that may adversely affect aquatic resources shall be stored outside of the channel. Any hazardous chemical spills shall be cleaned immediately.

Additionally, the Applicant shall implement MM-BIO 4 below to reduce impacts to wetlands and waters and riparian habitats.

*Impact BIO-3B: Disturbance to Other Sensitive Natural Communities*

As described in Table IV.D-1 above, in addition to the riparian communities discussed in Impact BIO-3A above, the project site contains nine other sensitive natural communities including depressional seasonal wetlands, vernal pools, perennial marsh, riverine seasonal wetlands, ephemeral, intermittent, and perennial drainages, ditches/canals, and excavated pits. Proposed grading on the site would occur largely within non-sensitive biological communities including the development of 180.48 acres of non-native annual grassland and 15.35 acres of developed land. However, in addition to impacts to 0.02 acre of Mixed Riparian Woodland, the proposed project would directly impact a total of 9.35 acres of wetlands and waters on the project site. If the City declines the proposed one-acre Land Transfer (see Project Description page III-19), then an additional 0.16 acres of wetlands would be impacted by the project. Table IV.D-3 through IV.D-6 below show the potential impacts of the proposed project within the Total Study Area on biological communities and specific aquatic resources.

**Table IV.D-3. Direct Impacts to Biological Communities within the Study Area**

Resources	Impacted (acres)	Preserved (acres)	Total (acres)
Developed	15.35	6.77	<b>22.12</b>
Non-native Annual Grassland	180.48	52.45	<b>232.93</b>
Wetlands and Waters	9.35*	6.39	<b>15.74</b>
Mixed Riparian Woodland	0.02	0	<b>0.02</b>
<b>Study Area &amp; Addenda Areas</b>	<b>205.2</b>	<b>65.61</b>	<b>270.81</b>

**Table IV.D-4. Indirect Impacts to Biological Communities within the Study Area**

Resources	Total (acres)
Developed	<b>3.88</b>
Mixed Riparian Woodland	<b>1.08</b>
Non-native Annual Grassland	<b>36.22</b>
Riparian Oak Woodland	<b>0.56</b>
Wetlands and Waters	<b>4.51</b>
<b>Study Area &amp; Addenda Areas</b>	<b>42.52</b>

**Table IV.D-5. Direct Impacts to Aquatic Resources**

Resources	Impacted (acres)	Preserved (acres)	Total (acres)
<b>Depressional Wetlands</b>			
Seasonal Wetland	3.07	0.64	<b>3.71</b>
Perennial Marsh	0	0.36	<b>0.36</b>
Vernal Pool	2.93	0.50	<b>3.43</b>
<b>Riverine Wetlands</b>			
Seasonal Wetland	2.96	0.55	<b>3.51</b>
<b>Other Aquatic Resources</b>			
Ephemeral Drainage	0	0.30	<b>0.30</b>
Intermittent Drainage	0.01	0.05	<b>0.06</b>
Perennial Drainage	0.01	3.98	<b>3.99</b>
Ditch/Canal	0.30	<0.01	<b>0.31</b>
Excavated Pit	0.07	0	<b>0.07</b>
<b>Study Area</b>	<b>9.35</b>	<b>10.84</b>	<b>15.74</b>

**Table IV.D-6. Indirect Impacts to Aquatic Resources**

Resources	Total (acres)
<b>Depressional Wetlands</b>	
Seasonal Wetland	<b>0.31</b>
Perennial Marsh	<b>0.88</b>
Vernal Pool	<b>0.40</b>
<b>Riverine Wetlands</b>	
Seasonal Wetland	<b>1.22</b>
<b>Other Aquatic Resources</b>	
Intermittent Drainage	<b>0.48</b>
Perennial Drainage	<b>1.13</b>
Ditch/Canal	<b>0.09</b>
<b>Study Area</b>	<b>4.51</b>

Direct impacts to 9.37 acres of sensitive natural communities within the project site, including 0.02 acres of Mixed Riparian Woodland and 9.35 acres of wetlands and waters, would be considered a potentially impact under CEQA. Indirect impacts to 6.15 acres of sensitive natural communities within the project site, including 1.64 acres of Mixed Riparian Woodland and 4.51 acres of wetlands and waters, would also be considered a potentially impact under CEQA.

Implementation of *Mitigation Measure BIO-3A* and *MM-BIO-4* would reduce impacts to sensitive natural communities that contain Mixed Riparian Woodland, wetlands and waters to a level of less than significant.

*Impact BIO-4: Have a Substantial Adverse Effect on Federally Protected Wetlands and Waters*

As described in Table IV.D-5 above, the proposed project would directly impact approximately 9.35 acres of wetlands and indirectly impact 4.51 acres of waters subject to Corps jurisdiction under Section 404 of the CWA. If the City declines the proposed one-acre Land Transfer (see Project Description page III-19), then an additional 0.16 acres of wetlands would be impacted by the project. Potential impacts to wetlands would include direct modifications to scattered seasonal wetlands and unvegetated drainages to accommodate improvements, and indirect changes associated with the increased potential for erosion and water quality degradation, and alteration of the hydrology through increase in impervious surfaces within the project site. Soils exposed during grading and construction would contribute to increased sediment loads if adequate erosion control measures are not implemented. Increased urban pollutants, such as petroleum products from automobiles, and fertilizers, herbicides, and pesticides associated with the suburban development may contribute to long-term degradation of water quality. These indirect impacts and appropriate mitigation are discussed in detail in Section IV.I, Hydrology and Water Quality, of this Draft EIR.

Project activities resulting in direct impacts to 9.35 acres wetlands and indirectly impact 4.51 acres of jurisdictional features would result in a potentially significant impact. If the City declines the proposed one-acre Land Transfer (see Project Description page III-19), then an additional 0.16 acres of wetlands would be impacted by the project. Modifications to the wetlands and other waters on the site would be subject to jurisdictional review and approval by the Corps, RWQCB, and CDFW. The City recognizes that subsequent permitting processes with resource agencies could result in additional mitigation beyond that required by the City in the CEQA process. Any additional mitigation required by the agencies would be incorporated as conditions of their permit authorization, but could provide additional measures addressing wetland resources. *Mitigation Measure BIO-4* would reduce impacts to jurisdictional wetlands and waters through compensatory mitigation to a less than significant level.

*Mitigation Measure BIO-4:*

Prior to issuance of any City permits for construction, grading, or other site-disturbing activities, the Applicant shall provide proof to the Chico Community Development Department that all necessary authorizations from the USACE and RWQCB for the discharge of dredged or fill material into the waters of the U.S. identified on the project site have been obtained.

Prior to any work affecting the bed or bank of the Butte Creek Diversion Channel, tributaries, or associated riparian areas, the Applicant shall obtain a Lake or Streambed Alteration (LSA) Agreement from the CFW, as required under Section 1602 of the Fish and Game Code. The LSA Agreement shall detail the authorized activities affecting the Butte Creek Diversion Channel, tributaries, and associated riparian areas, and provide specific terms and conditions necessary to protect fish and wildlife resources in the project site. The Applicant shall comply with all requirements of the LSA agreement, including any compensatory mitigation such as replacement of impacted trees. A copy of the fully executed LSA Agreement shall be submitted to the Chico Community Development Department prior to initiation of any work impacting riparian habitats on the project site.

To mitigate for the permanent loss of 9.35 acres and temporal impact to 4.51 acres of aquatic resources resulting from the project, the Applicant shall provide a USACE-approved compensatory mitigation plan for impacts to waters of the U.S. The plan shall provide for replacement of waters of the U.S. at a 3:1 ratio (three acres replaced for every one acre removed), or as required by the USACE. The plan shall describe the specific methods for replacement of impacted waters on site, and provide a monitoring plan, including a reporting schedule and success criteria over a specific amount of time. In the event the USACE determines that compensatory mitigation for impacts to waters of the U.S. cannot be fully accomplished on site, the Applicant may purchase credits at a USACE-approved mitigation bank whose service area includes the project site. The type and amount of credits shall be determined in coordination with the USACE. Proof of the purchase of any required mitigation bank credits shall be provided to the Chico Community Development Department prior to initiation of any work impacting waters of the U.S. on the project site.

*Impact BIO-5: Disturbance of Movement, Migration Corridors, and Nursery Sites*

The Butte Creek Diversion Channel and its tributaries traverse the eastern portion of the project site from north to south. In addition, a series of vernal pools and seasonal wetlands are interspersed and connected by seasonal wetland swales generally running from north to south throughout the project site. The diversion channel and seasonal wetland swales provide movement corridors for common and special-status species as described above. In addition, the areas could provide habitat for other wildlife species, such as egrets and other waterfowl. The riparian habitat along the Butte Creek Diversion channel and its tributaries provide important shelter, nesting and foraging habitat for both common and special-status wildlife species in the region. Proposed project activities would preserve the Butte Creek Diversion channel, associated tributaries and riparian habitats along the eastern portion of the project site.

Approximately 9.35 acres of vernal pool and seasonal wetland habitats located centrally in the project area would be directly impacted by project activities. The project would further indirectly impact 4.51 acres of vernal pool and seasonal wetland habitats. These aquatic features act as nurseries to special-status species including the western spadefoot and vernal pool crustaceans. The loss of connected vernal pool and seasonal wetland habitat within the project site would represent a potentially significant impact under CEQA. As described above, *Mitigation Measure BIO-4* would result in the creation, preservation, or restoration of seasonal wetland habitats. Therefore, implementation of *Mitigation Measure BIO-4* would also reduce impacts to loss of these nursery areas to a less than significant level.

*Impact BIO-6: Conflict with Local Policies or Ordinances Protecting Biological Resources*

As described in the in the Regulatory Setting above, the proposed project is subject to the City of Chico Municipal Code which includes the City's requirements for tree removal and for riparian setbacks. The proposed project does not include the removal of any trees and therefore would not conflict with tree removal permit requirements. The City of Chico municipal code also requires a minimum 25-foot setback from the top of creek banks to development and associated above-ground infrastructure as a part of project review. The vast majority of the proposed project would be located outside of the 25-foot setback from the top of creek banks. Utilities to serve the RS-20 lots would run underneath the Butte Creek Diversion Channel, however these would utilize directional boring and would not represent any above-ground infrastructure within the creek setback. Therefore, the proposed project would have a less than significant impact related to local policies and ordinances protecting biological resources.

*Impact BIO-7: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan*

As stated above in the Regulatory Setting, the Butte County Association of Governments initiated development of the Butte Regional Conservation Plan (BRCP) in 2007, which has not yet been formally approved or implemented. As currently being revised, the BRCP is expected to exclude the Stonegate project from the BRCP permit area, which will eliminate any conflict between the BRCP and the project, and will allow the project to move forward separately via the existing state and federal permitting processes as anticipated in the foregoing analysis. As such, the proposed project would not conflict with any adopted or approved plans and no impact would occur.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

All project impacts related to biological resources are ***less-than-significant*** after implementation of *Mitigation Measures BIO-1* through *BIO-4*.



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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### E. CULTURAL RESOURCES

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#### INTRODUCTION

This section of the DEIR evaluates potential impacts to cultural resources that may result from implementation of the Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone ("proposed project"). The information and analysis in this section is based on the following cultural resources reports prepared for the proposed project, which are included in Appendix E of this Draft EIR:

- Far Western Anthropological Research Group, Inc. (Far Western), Archaeological Survey and Extended Phase I Report for the Stonegate Subdivision Project, Butte County, California, June 2017.
- ECORP Consulting, Inc., Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, August 2017
- Sub Terra Consulting, Archaeology and Paleontology, Peer review of Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, November 2017

#### Methodology

Far Western conducted cultural resources studies for a subdivision, general plan amendment and rezoning of the proposed project in southeast Chico, Butte County, California. These studies included an archival records search at the Northeast Information Center at Chico State University, online research of historical maps and land records, a buried site sensitivity analysis, Native American and Historical Society consultation, and an intensive pedestrian survey and partial metal detector survey. The records search included a one-quarter mile buffer around the Area of Potential Effect ("APE") and the following sources were reviewed:

- National Register of Historic Places listing
- California Office of Historic Preservation Historic Properties and Archaeological Determinations of Eligibility Data Files
- California Inventory of Historic Resources
- California Department of Transportation Historic Bridge Survey
- General Land Office Plat Maps
- 1912 Chico US Geological Survey 7.5-minute topographic map
- 1895 Chico US Geological Survey 30-minute topographic map

Six previous studies have been conducted within the APE, approximately 50% of which had been previously surveyed. Thirteen additional studies were identified within the one-quarter mile records search buffer zone, and one regional study was identified which encompasses the entire APE and records search area. A letter was also sent on July 26, 2016 to the Butte County Historical Society, requesting information on the project area. A follow-up telephone message with the same information was left on March 8, 2016. As of March 2017 no response has been received.

A letter was sent to the Native American Heritage Commission ("Commission") on July 8, 2016, requesting a review of the Sacred Lands file and a list of interested Native American tribes and individuals. On July 13, 2016, the Commission responded indicating that they have no knowledge of Native American resources within the Project site and providing a list of five individuals/organizations to contact. Letters were sent to these individuals/organizations on July 26, 2016, requesting information on the project area and soliciting comments on the proposed general plan update. Michael DeSpain from the Mechoopda Indian Tribe called on August 8, 2016, to discuss the project and requested that tribal monitors be present during future ground-disturbing activity, including coring. No other comments were received from interested Native American parties.

Following submittal of a Far Western's report that recommended further excavation at BUT-4210H and BUT-2207H and formal evaluation of BUT-4209H and BUT-1281H, Westwood and Fuerstenberg (2017) conducted additional field studies. Sub Terra Consulting, Archaeology and Paleontology provided a peer review for the City of Chico of these additional field studies.

## **ENVIRONMENTAL SETTING**

### **Sacramento Valley Setting**

The study parcels are situated in the northern end of the Sacramento Valley, which is the northern portion of the Great Central Valley drained by Sacramento River. The Sacramento Valley is bounded on the east by the Sierra Nevada Mountains, on the west by the Coast Ranges, the Siskiyou Ranges to the north, and the Sacramento-San Joaquin Delta to the south. The principal feature of the valley is the Sacramento River flowing southeast for about 240 kilometers (149 miles) along the valley axis until it merges with San Joaquin River to form the Delta before draining into San Francisco Bay. The Sacramento River is fed by several tributaries; the American and Feather rivers are among the largest. The level valley floor is underlain by alluvial sediments up to 17 meters (55.8 feet) thick, derived mostly from sierra streams.

Non-tidal marshlands in the Sacramento Valley formed a continuous strip along the Sacramento River to approximately the modern town of Willows. Extensive tule marshes were also found in the natural flood basins which occupied much of the lower valley between the narrow river levees and mountain-front alluvial fans. Combined, these marshlands are estimated to have once covered some 300,000 acres.

In addition to the Sacramento River, all of the major watercourses draining the Sierra Nevada and Cascade Range, including the Cosumnes, American, Yuba, and Feather rivers, were largely or partially flanked by broad gallery forests. Modern estimates suggest that as much as 364,000 acres of the Sacramento Valley was once covered by distinct riparian vegetation including valley oak woodlands and river-bank forests. The breadth of these habitats varied depending on the width of the natural levees, but is thought to have ranged from as much as five miles wide along lower portions of the Sacramento River to less than one to two miles along the smaller tributaries. While these communities would have been found west of the project area, they would have represented the most resource-rich habitats in the region and therefore exerted a strong influence on prehistoric settlement.

Riparian forests along the middle and lower reaches of these rivers often formed dense, multi-tiered canopies of primarily deciduous species. The lowest terraces were occupied by a thick forest of willows and Fremont cottonwood. On the adjacent levees and floodplains, the over-story was dominated by cottonwood (*Populus* sp.), valley oak (*Quercus lobata*), California sycamore (*Platanus racemosa*), Oregon ash (*Fraxinus latifolia*), and black walnut (*Juglans nigra*). The subcanopy commonly included white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), buckeye (*Aesculus californica*), big leaf maple, and elderberry (*Sambucus nigra* subsp. *caerulea*), while the understory was composed of willows (*Salix* sp.), grape vine (*Vitis* sp.), blackberry (*Rubus ursinus*), poison oak (*Toxicodendron pubescens*), and numerous other shrubs and herbaceous species forming dense thickets.

Farther from the rivers and streams, oak woodlands formed uniform tracts up to three to five kilometers (about two to four miles) wide, consisting almost exclusively of valley oak. These forests were more common on the eastern side of the valley and often created a dense canopy. The underlying savanna was open, carpeted by native bunch and annual grasses including abundant wild rye (*Elymus triticoides*). A sparse understory in the oak woodland also included poison oak, elderberry, buckeye, and wild rose. Large expanses of the valley between the oak savanna and the lower foothills were blanketed by open grassland of the California prairie. Covering much of the deep alluvial fans and floodplains along the valley margins, the pristine Central Valley prairie formed a thick mat of annual and perennial grasses. Perennial purple needlegrass (*Stipa pulchra*) is thought to have been a dominant species, along with nodding needlegrass (*Stipa cernua*), blue wild rye (*Elymus glaucus*), pine bluegrass (*Poa secunda* ssp. *secunda*), and deergrass (*Muhlenbergia rigens*).

#### *Sacramento Valley Fauna*

Among the most prominent mammals in the Sacramento Valley were three species of ungulate: tule elk (*Cervus elaphus*); pronghorn (*Antilocapra americana*); and black-tailed deer (*Odocoileus hemionus*). Early historical accounts suggest that elk were common in all habitats on the valley floor. Historically, the valley is estimated to have had one of the largest populations of pronghorn in North America. These animals would have been found throughout the prairie grasslands from the outer border of the riparian forests and marshes to the lower limits of the foothill woodland. Black-tailed deer would have been most common in the riparian forests and

oak woodlands, but reached highest densities in the chaparral and woodlands of the surrounding foothills. Deer, unlike other ungulates of the Sacramento Valley, tend to be more solitary, residing individually or in groups of just a few animals.

Grizzly bear (*Ursus arctos*) were once common throughout the Sacramento Valley, as were black bears. Puma (*Felis concolor*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*) were the principal carnivores, along with badger (*Taxidea taxus*), spotted skunk (*Spilogale gracilis*), and striped skunk (*Mephitis mephitis*); all could have been found in a variety of valley habitats. A host of other smaller mammals were common in the riparian and woodland communities including beaver (*Castor canadensis*), weasel (*Mustela frenata*), mink (*Neovision vision*), and river otter (*Lutra canadensis*), as well as raccoon (*Procyon lotor*), ringtail (*Bassariscus astutus*), gray squirrel (*Sciurus griseus*), ground squirrel (*Spermophilus beecheyi*), woodrat (*Neotoma* sp.), cottontail rabbit (*Sylvilagus* spp.), and brush rabbit.

Marsh, grassland, and riparian habitats were home to resident waterfowl such as ducks (*Aythya* spp.), coots (*Fulica americana*), cormorants (*Phalacrocorax auritus*), grebes (*Aechmophorus occidentalis*), herons (*Ardeidae*), cranes (*Grus* spp.), egrets (*Ardea* spp.), and gulls (*Larus* spp.). Between about November and February, enormous flocks of waterfowl migrating along the Pacific Flyway arrived in the Sacramento Valley. These included as many as 39 different species of ducks, geese (*Anser* spp. and *Chen* spp.), brants (*Branta* spp.), and swans (*Cygnus* spp.). Although much reduced from the historic period, modern singleseason population counts of migratory waterfowl reach as many as 335,000 individuals. In the spring, these species migrate as far north as Alaska and the Bering Strait to breed.

A diverse resident avifauna was also present historically in the Sacramento Valley, composed primarily of hawks, eagles, doves (*Columbinae*), quail, flicker, woodpeckers (*Picidae*), various other accipiters (*Accipitridae*), owls (*Tytonidae* and *Strigidae*), turkey vulture (*Cathartes aura*), and numerous passerine (i.e., perching) birds.

Open channels and lentic habitats of the river system each supported different types of fishes. In the open fast-moving waters of the rivers and larger streams were found resident hardhead and sculpins. Sacramento sucker and western pike-minnow were common in both fast- and slow-water habitats, while the calmer waters of the Delta and rivers were home to splittail (*Pogonichthys macrolepidotus*), hitch (*Lavinia exilicauda*), thicktail chub (*Gila crassicauda*), Sacramento blackfish (*Orthodon microlepidotus*), Sacramento perch (*Archoplites interruptus*), and tule perch.

While all five species of Pacific west coast salmon are known from the Sacramento Valley, Chinook salmon is the principal species. Four large runs of Chinook occurred annually in the Sacramento-San Joaquin system, with fall and spring runs the most significant. It is estimated that each year, Native American fishers in the Central Valley harvested upwards of 8.5 million pounds of salmon. Other economically important anadromous fishes in the river system included white and green sturgeon (*Acipenser* spp.), Pacific lamprey (*Lampetra lethophaga*), and steelhead rainbow trout. Aquatic environments also supported pond turtle (*Clemmys*

*marmorata*) and populations of freshwater mussel including ridged mussel (*Gonidea angulata*) and pearl mussel (*Margaritifera* spp.).

## Prehistory

The archaeological record of the Sacramento Valley is complicated by a variety of factors, some caused by geomorphic processes and others resulting from the high degree of cultural diversity that characterized much of northern California deep into prehistory. As a result of geomorphic processes in the oft-flooded Sacramento River Valley, there is a lack of appreciable material pre-dating 4300 cal BP from the lowlands, and information about the post-4300 cal BP record is relatively sparse when compared to the surrounding foothill and mountainous areas.

### *Paleoindian Period (13,500-10,000 cal BP)*

The earliest evidence of human occupation in north-central California comes from isolated projectile points found in just a few locations adjacent to the Sacramento Valley. These distinctive artifacts are morphologically similar to Clovis points which have been traditionally dated to a relatively brief interval at the end of the Pleistocene between 13,500 and 11,500 cal BP (Fiedel 1999). A recent reconsideration of radiocarbon dates from Clovis sites has led Waters and Stafford (2007) to conclude that these projectile points may have been in use for a much shorter period—just 450 years—between 13,250 and 12,800 cal BP. They believe that the widespread distribution of Clovis points across much of North and South America was the result of technological diffusion rather than cultural migration. If so, they suggest that a pre-Clovis human population must have existed in the Americas, a contention that remains highly controversial but is beginning to be more widely accepted by archaeologists.

No fluted projectile points have yet been reported from the Sacramento Valley, but isolated Clovislike points have been recovered in the adjacent North Coast Ranges and Sierra Nevada, including finds made near Thomes Creek in Tehama County (Dillon and Murphy 1994), at Big Meadows in Plumas County (Kowta 1988), and near Loyalton in Sierra County (Kowta 1988). The most substantial collection of fluted points and other early tools in northern California, however, comes from the Borax Lake site (CA-LAK-36) located southwest of the current study area in the Clear Lake Basin (Harrington 1938, 1948). Meighan and Haynes (1970) have shown that fluted points from LAK-36 are contained in a Holocene-age debris flow and are mixed with substantially younger archaeological materials. This has made interpretation of the Borax Lake assemblage difficult, despite strong evidence for paleoindian occupation of the site (Fredrickson and White 1988; Meighan and Haynes 1970).

### *Lower Archaic Period (10,000-7500 cal BP)*

More definitive evidence of human occupation in the Sacramento Valley region emerges after 9000 cal BP, but not within the valley itself. Most of the artifacts dating to this time are found in upland areas to the north and west and are affiliated with the *Borax Lake Pattern* (Hildebrandt 2007; Sundahl 1992). The Borax Lake Pattern spans a great deal of time (9000 to 5000 cal BP) and is defined by wide-stemmed projectile points, handstones, millingslabs, ovoid flake tools, and a variety of other utilitarian items (Clewett and Sundahl 1983; Fitzgerald and Hildebrandt

2002; Hildebrandt and Hayes 1983, 1993; Kowta et al. 2000; Sundahl 1988, 1992; Sundahl and Henn 1993). Most sites appear to represent short-term residential areas created by small family bands that used a subsistence-settlement strategy characterized by high degrees of mobility. This system, often referred to as a “forager” adaptation (*sensu* Binford 1980), focused on moving human groups from one resource patch to another as the seasons changed throughout the year. Although residential sites have not been found on the valley bottom, largely due to the high rates of alluvial deposition mentioned previously, it seems likely that these habitats were also important parts of the larger subsistence-settlement system.

#### *Middle Archaic Period (7500-2500 cal BP)*

Little is known about what Meyer and Rosenthal (2008) call the Early Middle Archaic (7500 to 5000 cal BP), as no sites dating to this interval have ever been excavated in local valley settings. Our knowledge increases significantly for the post-5000 cal BP period, here identified as the Late Middle Archaic. During this period, cultural diversity increased, and our first glimpse of the valley bottom archaeological record emerges. White (2003) collected several auger samples from the Reservation Road site (COL-247) and discovered a deeply buried component (3.0 to 3.5 meters below surface) dating to 6020 cal BP, but was not able to formally excavate it. Archaeological samples improve at about 4300 cal BP, as residential midden deposits have been excavated at COL-247 (Stratum 3; 4385 to 3575 cal BP; White 2003) and Llano Seco (BUT-233; 4300 to 2200 cal BP; Dreyer and Kowta 1984). These components include a combination of contracting-stemmed, notched, and concave-base dart points that are somewhat consistent with Middle Archaic findings in the larger region, but do not reflect clear associations with either the Martis (Bucks Lake) or Squaw Creek patterns defined for the outlying areas. Artifact assemblages from these sites are variable in size, but include a wide diversity of domestic tools and the first evidence for the use of mortars and pestles in the local area. Acorn macrofossils have also been found in both sites, clearly documenting the long-term importance of this dietary staple.

#### *Upper Archaic Period (2500-1000 cal BP)*

Although not matching up precisely with the Middle-Upper Archaic boundary defined by Rosenthal et al. (2007), the Sacramento Valley sequence shows a major break in the archaeological record at about 3000 cal BP. The Whiskeytown Pattern of the Upper Sacramento is characterized by a wide range of corner- and side-notched dart points, handstones, millingslabs, notched pebble net weights, and a limited number of mortars and pestles (see also the Deadman and Kingsley complexes in Tehama County; Greenway 1982; Johnson 1984).

White’s (2003) discovery of a component dating between 3222 and 2750 cal BP at COL-247 seems to represent a permanent village with affinities to those associated with Windmillers Pattern sites in the Delta and Berkeley Pattern (Houx Aspect) settlements in the Clear Lake Basin. Major residential components have also been identified at BUT-233 (Dreyer and Kowta 1984), the Cana Highway site (BUT-288; Deal 1987), and the Wurlitzer site (BUT-294; Dreyer and Kowta 1984), although their relationships to other cultural complexes have not been

proposed. Artifact assemblages from these sites reflect a greater reliance on mortar-pestle technology, have a wide range of cooking features, show more intensive use of bone tools, and where analyzed, tend to have floral and faunal remains reflecting multiple seasons of occupation. Combined, these attributes appear to represent the development of a fundamentally new collector adaptation (*sensu* Binford 1980) where centralized villages were supported by logistical forays to outlying areas, exchange relationships with neighboring groups, and greater dependence on long-term storage.

#### *Emergent Period (Post-1000 cal BP)*

Many significant changes took place throughout northern California by the Emergent Period, increasing the cultural complexity and diversity of the region. The Augustine pattern developed along the Colusa Reach (White 2003) and down into the Sacramento-San Joaquin Delta (Rosenthal et al. 2007). The Augustine reflects the establishment of large riverine villages supported by intensified subsistence economies with increasing dependencies on fish. Bow and arrow technology appears for the first time (represented by Gunther Barbed and later Desert Side-notched projectile points), as do a variety of fishing implements including composite harpoons and bone fishhooks. Large numbers of hopper mortars and pestles reflect the intensive use of plant foods, while the artistic and recreational parts of culture are revealed through items like incised bone and stone pendants, abalone shell pendants, bone gaming pieces, and a variety of shell beads. Clam disk beads became popular after 500 cal BP, and were commonly used as money throughout the region.

The large village sites of the Augustine Pattern contain the remains of house structures, cooking features, and formal cemetery areas. Dark charcoal-rich midden deposits are also quite common and include freshwater shellfish, butchered mammal bone, and an abundance of fish bone (including salmon in northern latitudes), as well as the charred remains of acorns, small seeds, and a variety of other plant foods. These findings clearly show that the mobile settlement systems of the Whiskeytown and Mendocino patterns along the northern and western reaches of the Sacramento Valley were a thing of the past, as the local populations settled into more permanent villages made possible by the large-scale storage of fish and acorns, and the inter-regional exchange of other important commodities.

#### **Ethnography**

Following is a brief overview of the lifeways of the Konkow. For a thorough, recent study of the Konkow Peoples the reader is referred to McCarthy (2004), which includes detailed ethnographic, ethnohistoric, and historical information. McCarthy's report includes the Mechoopda, their interactions with John Bidwell, and the effects of the Euro-American community on the environment and lifeways of the Native Americans.

The project parcel is within the traditional range of the Northwestern Maidu, though the dividing lines between the Northeastern Maidu to the east, Nisenan (or Southern Maidu) to the south, and Yana to the north are not well-established for the protohistoric period. The name Konkow, an anglicization of the Maidu word kóyo-mkàwi for "meadowland," has more commonly been

assigned to groups living in this area. However, Konkow (a.k.a. Cou-Cou, Cancow, KanKau) may actually refer to the more specific tribelet of Northwestern Maidu living in the Konkow Valley near Oroville. This term has since been applied to all Northwestern Maidu groups. Maidu living in the region today generally self-recognize as Konkow, and this term is retained below.

Konkow, along with Nisenan and Maidu (or Northeastern Maidu) is one of three major subgroups of the Maiduan language family, which itself is part of the Penutian stock. Divisions of Konkow are recognized, including Foothill and Valley (or Mechoopda), which at the time of contact could be further divided into regional dialects. The 645-acre parcel falls within Valley Konkow territory.

Ethnographic information indicates that at the time of contact, Konkow were organized into village communities of approximately 150–400 individuals. The village community was an autonomous unit consisting of several nearby and self-sufficient villages, each of which may have housed 40 or more people. Villages were usually located on higher ridges or knolls overlooking more permanent creeks and rivers, particularly the North, Middle, and South Forks of the Feather and Sacramento rivers. Such locations provided views of the surrounding landscape and gave protection from high water during floods. Rathbun identified 14 such village communities in the Butte County area, one of which is Chico or *Michupta*. The Mechoopda Tribe is active today.

Village communities owned fixed fishing, hunting, and gathering territories, the boundaries of which were actively protected against poachers and intruders. A large semi-subterranean earth-covered lodge, or *kùmi*, served as an assembly chamber in the central, though not necessarily the most populous, village. Often, the headman in the village community would live in and keep up the *kùmi*. This person was selected based on his ability, generosity, maturity, and wealth. While they could influence or encourage others to behave in particular ways (i.e., authority), headmen did not have any true power over other villages or people.

The traditional Konkow subsistence economy was based on a hunting and gathering way of life. Small seeds and acorns formed the staple of the diet, though fishing and hunting provided sustenance as well. Mobility, both logistical and residential, was an important facet of the subsistence-settlement pattern to exploit locally abundant and spatially variable food resources. Hunting and gathering, however, does not indicate a passive harvesting of available resources from the landscape. Grasslands and other environments were carefully managed and manipulated by Konkow and other Native Californians through clearing, pruning, sowing seeds, and especially burning.

The seasonal round was organized around various activities. In spring, families would collect various small seeds and leafy greens as they would ripen, especially Indian rice grass, in the valley bottom. Seeds may have been collected on a logistical basis, with groups of women making daily forays into the surrounding area to harvest seeds with seed beaters and burden baskets. Seeds were likely parched and ground into a flour prior to consumption. Men would hunt and fish to supplement the gathered food resources. In most years, spring salmon runs



would have been an important source of food. During this time, families resided in valley bottom base camps in more substantial and formal semi-subterranean houses.

In the summer, men would venture into the nearby Sierra foothills and mountains to fish and hunt deer, which were brought back to the base camp. Occasionally, the entire village would relocate to these areas to inhabit summer camps. During occupation, families would live in open (i.e., roofless) and more ephemeral brush enclosures. While the men would fish and hunt, women would gather various seeds, roots, and other plant products. Families might stay in these higher-elevation base camps through early fall to gather pine nuts, manzanita berries, acorns, and buckeye. The latter two resources required extensive processing (i.e., leaching) to remove various toxins (tannic and prussic acids) and were typically boiled in baskets using heated stones. Other resources collected during this time might include various insects and berries. Many of these resources would be over-harvested and stored in anticipation of winter.

If they had summered in the Sierran foothills, groups would move back to the valley-bottom base camp in winter. People would live off of stored goods harvested in the summer and fall, as well as winter runs of salmon and migratory waterfowl. Because fewer foods are available in winter, wintertime activities may have included production of various material goods, such as basketry items, clothing, cordage, stone tools, and decorative ornaments.

While much time was surely spent foraging and producing the material goods used in those activities (e.g., baskets, grinding stones, bows, projectile points, nets), the hunting and gathering lifestyle of the Konkow undoubtedly afforded much time for socializing—talking, storytelling, dancing, gambling, visiting family and friends, etc.—trading goods and information, and performing rituals. Konkow mythology deals mainly with animals, such as hummingbird, lizard, dog, rattlesnake, and coyote, and their interactions within and with the natural landscape and the supernatural. These myths served to embody Konkow values and world views, and were told to children by elders on various occasions. Singing, dancing, and feasting marked different events, both happy and sad, including male and female initiation into adulthood, death, and the passing of various seasons. Associated rituals observed at these events often served an important role in maintaining balance in both the natural and spiritual worlds. Singing, dancing, and gambling also served as a form of pleasure and amusement during more normal or everyday types of activities. Although these activities would have been of much importance in prehistoric times, as they continue to be among present-day Konkow, they are, unfortunately, less visible in the archaeological record.

### **Ethnohistoric Context**

The first contacts with Euro-Americans probably occurred in the early part of the nineteenth century. Gabriel Moraga seems to have been one of the earliest explorers moving through this section of the Sacramento Valley. Moraga was looking for mission sites and apparently met with Maidu near the Sutter Buttes. Other early explorers included Padre Arbella in 1811 and Captain Lewis Arguello in 1820. These early contacts seem to have had only minimal effects on Native lifeways.

Although no settlements were established by Spanish explorers, beginning in 1824, the Mexican regime divided California lands into large parcels referred to as ranchos. Land grants were awarded in the Central Valley, including the “Boga,” or Butte grant, covering acreage within present-day Sutter and Butte counties and “New Helvetia” John A. Sutter’s 1839 grant of lands in Sutter, Sacramento, and Yuba counties. The Boga was a 22,185-acre grant north of Sutter Buttes.

The pace of Euro-American contact increased from 1820 to 1848. Various trappers, the occasional homesteader, and different exploration teams moved through the valley, interacting with Maidu inhabitants, some in negative and racist ways and others indifferently. More drastic, diseases were introduced and quickly spread among the Maidu in this period. Several epidemics, including smallpox and malaria, were responsible for many deaths among the Konkow, which had devastating and lasting effects on social conditions.

Due to the 1848 discovery of Sierran gold, New Helvetia developed into the City of Sacramento, which became the hub of northern California. By 1849, traditional Maidu lands were overrun with gold miners. Explorers, miners, and settlers brought livestock that changed the ecology of native lands, reducing food resources, and eventually becoming targets for people whose food was becoming scarce or extinct. Konkow and Nisenan populations were nearly halved between 1846 and 1850. In the years that tens of thousands of miners and accompanying settlers flocked to the state, they invaded Konkow territory and created tensions, often violent, between the two ethnic groups. Killings are reported on both sides, though Euro-Americans had greater access to guns and were backed by lawmakers (who were also white) and were responsible for greater numbers of homicides. Native people were often killed indiscriminately and villages burned when oxen or other livestock went missing. In many cases, Native people may not even have been involved, and the disappearance of livestock presented a convenient excuse to help exterminate and remove the Maidu from their land. Moreover, grazing, farming, and the spread of introduced species caused great ecological change, restructuring the availability of hunted and gathered food sources and placing further stress on Maidu populations.

Despite strained relations, Indians often worked for the miners and ranchers. John Bidwell was one of those who profited from Indian labor for both mining and ranching endeavors. There are different views about John Bidwell’s treatment of local Indians. The Maidu village of “Mechoopda” may have existed prior to Bidwell’s Rancho or formed serving Bidwell’s operations, but a substantial settlement existed near the Rancho Chico headquarters beginning in 1849. The Bidwells deeded an allotment of Ranch lands to the Mechoopda Rancheria holdings. It is said by some that he was a fair man and a protector of his Indians, but others considered him harsh.

The state attempted to settle conflicts through the establishment of a reservation, and in 1854 a Konkow Reservation was established at Nome Lackee. However, in 1863 its residents were forced to abandon the reservation and march to the Round Valley Reservation in Mendocino County. Of the 461 people leaving Nome Lackee, only 277 arrived in Round Valley, many having been killed or dying along the way. As well, poor conditions in Round Valley prompted many to return to Butte County and the traditional Konkow homeland, where they worked as

wage laborers on mines and ranches, along with the small number of Konkow who had never left.

By now their traditional subsistence and settlement activities were no longer possible, and Konkow were forced to assimilate into the dominant White culture. As a result, a great loss of language and traditional culture ensued. However, this process was not complete, and many traditional crafts, dances, and myths continue to be passed down through the generations, in one form or another. As well, there have been recent attempts to revive the language and other elements of traditional culture.

### **History of Central Butte County**

The history of Butte County centers around the diversified themes of mining, cattle ranching, agriculture, and the timber industry, interspersed with continued growth in population, cities, and transportation. However, the history of central Butte County is largely centered on cattle ranching. Butte County was organized in 1850 as one of California's original counties, including within its boundaries areas of what later became Lassen, Plumas, Tehama, Colusa, and Sutter counties. It received its name from the Sutter Buttes, now located in Sutter County. Hamilton was the original county seat until 1853, when it was moved to Bidwell's Bar, before finally being transferred to Oroville in 1856.

The beginning of ranching in Butte County can be traced to 1845, when Samuel Neal and David Dutton settled on the 22,000-acre Esquon Grant, seven miles south of Chico near Durham, bringing in cattle acquired from John Sutter. There were eight other early land grants in Butte County, including John Bidwell's Rancho del Arroyo Chico to the north, but Neal is generally credited with establishing the cattle industry in the county.

Shortly after the discovery of gold at Coloma in 1848, Bidwell, Neal and others left their ranchos to search for gold, making discoveries at various places along the Feather River, including Bidwell's Bar, Monterey Bar, and Adamstown, near Oroville. Gold hunters swarmed to the area, and by the end of 1850 there were 214 mining camps in Butte County. Travel increased through the area with the opening of the Beckwourth Trail over Donner Summit (later the Oroville-Quincy Wagon Road incorporated into State Route 70) through Bidwell Bar to Marysville in 1851. Butte County was one of the chief gold-producing sections of the state, with conservative estimates of production by the turn of the twentieth century exceeding \$200 million.

With the rush for gold came a need for supplies for the growing towns and camps in the region. Sam Neal returned to his ranch in 1849 with \$110,000 he earned from gold mining, and stocked it with cattle and horses. The Esquon Rancho was confirmed to Neal in 1852, and a patent was issued in 1860 for the 22,000-acre ranch. In 1852, he built a sawmill at the head of Little Butte Creek, leading the way in the developing timber industry in the county. Thirteen other mills were in operation by the end of 1852.

Also in 1849, John Bidwell closed his gold diggings and turned to agriculture and merchandise to supply the swelling population of the state (see White 2002 for more detail). He acquired the

Rancho del Arroyo Chico, a 22,214.47 acre land grant in two purchases in 1849 and 1851. Bidwell's Rancho Chico headquarters had included multiple structures and ranch operations, some just south of the proposed project area. Between 1849 and 1892, Bidwell was active in California State politics, and served one term in Congress from 1865 to 1867. He is considered a builder of the California commonwealth.

The cattle business in Butte County thrived owing to the demand for meat produced by the mining and lumbering communities, and the railroads rushed to provide freight service for these expanding industries. The first train arrived in the region at Oroville in 1864 on the Northern California Railroad from Marysville. The town of Chico, which had been growing since 1849 on Big Chico Creek on Bidwell's Rancho, was founded in 1860 and became one of the largest settlements in the area, surpassing Oroville by 1870. In that year, the Central Pacific celebrated the opening of its line to Chico (the California and Oregon Railroad). The California and Oregon Railroad stopped at Chico to take advantage of the cattle, agricultural, and timber industries there. The towns of Gridley, Biggs, Nelson, and Durham sprung up along the railroad. Also in 1870 the California Pacific Railroad was completed to Marysville, where a connection was made with the California Northern to Oroville. The Southern Pacific Railroad ("SPRR") acquired the California & Oregon Railroad in 1989. The SPRR now runs through the west side of Butte County, through Chico, with a branch line from Marysville to Oroville, while the Western Pacific runs through the Feather River Canyon on the east side. The Sacramento Northern runs southeast from Chico to Oroville Junction.

While the cattle and timber businesses boomed in Butte County, agriculture continued to hold promise. By 1857, Bidwell had 350 acres at Rancho Chico under cultivation for tree and row crops. By 1867, there were 240,664 acres enclosed, and by 1915, more than 275,000 acres were available for agriculture, encompassing the eastern half of the county closest to the Sacramento River. The central part of the county, from Neal's land east to the foothills, was heavily used for cattle and sheep raising, while the timber industry thrived in the northern and western part of the county.

Increased attention to roads and bridges followed as a result of mining, agriculture, increased population and stable settlements. By 1895, Butte County had 100 miles of graveled road and 600 miles of graded roads. One of these roads, existing by 1886 was a road from Oroville to Chico, later called the Oroville-Chico Highway.

In 1860, Bidwell founded the town of Chico on his ranch and later donated land for a public school, and a large area for the Northern Branch State Normal School, started in 1887, which is today California State University, Chico. Bidwell died in Chico in 1900, and with his wife's death in 1918 the proposed site for the Natural History Museum was deeded from the Bidwell estate to the state along with the Bidwell Mansion and some lands.

## Previously Recorded Resources

### CA-BUT-1281H

Site BUT-1281H is a “rock wall” or stone fence. Just one segment was originally recorded, but noted that it extended to the east. The segment was re-recorded by Far Western and designated as BUT-1281H Segment A, and the resource extent expand. The feature also intersects with the stone fence recorded as BUT-1281H Segment B, and a final section as BUT-1281H Segment C. The wall was initially recommended ineligible for the National Register but no formal determination was made (Jensen and Associates 1992). It is worth noting that “rock walls” (more accurately described as fences) are called out in the City of Chico’s General Plan as features of local significance. As part of the initial recordation, Jensen and Associates (1992) recommended the resource ineligible for the National Register under all criteria. However, those authors provided no evidence to support their recommendation that the feature is ineligible. There is no indication in their report that they conducted any subsurface testing, metal detection, archival research, or oral history investigations.

Other researchers provide the following information. Swinlinger and Bayham (1988:3) report that “the stone fence that still stands on Bruce and Humboldt Roads was built [for] Mr. Bruce in the early 1870s.” They cite a “letter on file at the California State University, Chico Archives” as saying that the fences built on the Bruce Ranch were built by a Charles Royls. They also note that “a portion of this stone fence near the intersection of Bruce and Humboldt Roads [outside the current project APE] was set back 20 feet by the City of Chico to widen Bruce Road” in 1988. Swinlinger and Bayham conclude that “for both reasons of historic significance and their value as an intangible asset of the landscape, stone fences should be preserved when possible”. They recommend avoiding impacts to the wall, possibly by incorporating it into development plans. In a later study, Harrington reports that an in-situ part of the “wall” (BUT-1071H) was to be moved and rebuilt “to match the alignment of the previously relocated wall.” She recommends the resource as ineligible due to lack of integrity—though presumably she evaluated only that portion in her study area, which was to the north of, and outside, the current APE.

Westwood and Fuerstenberg (2017) did not conduct any additional fieldwork, but evaluated the stone fence for eligibility to the California and National Registers. They concluded that the fence was not associated with important events in local, state, or national history, was not the work of a master nor did it possess high artistic value, and did not provide important information regarding local history. The fence was, however, associated with three well-known local land owners (Bruce, Entler, and Lucas) and therefore qualifies for listing under Criterion 2/B (association with people important to the past). They concluded, therefore, that the resource was eligible for listing on the California and National Registers. The project will require cutting the fence segments in certain locations to accommodate access to the new development, but the majority of the fence lines will be preserved and incorporated into the project design. Westwood and Fuerstenberg (2017:42) concluded that these changes would not alter character-

defining features of the resource and therefore would not constitute an adverse effect and no mitigation would be required.

*CA-BUT-2207H (P-04-002207)*

Site BUT-2207H is the partial remains of a historic-era building foundation. Jensen and Associates suggest that this foundation may have been a barn. They concluded that the site was not associated with events which have made a significant contribution to broad patterns of history (California Register Criterion 1), nor was it associated with significant persons (Criterion 2). They also found that the foundation did not embody characteristics of a type, period, or method of manufacture (Criterion 3). The apparent lack of associated artifacts, according to Jensen and Associates, limited the data potential of the foundation, making it ineligible under Criterion 3.

However, as with BUT-1281H, there is no indication that those authors carried out any kind of formal evaluation (metal detector survey, surface scrapes, archival research) to support their recommendations; instead it appears that they based their conclusions on surface observations only. Moreover, there is no evidence to suggest that a formal determination of eligibility has ever been made for this site. Far Western found that there is insufficient integrity for BUT-2207H to be considered eligible under Criteria 1, 2, or 3, Far Western recommended that it had not been properly evaluated under Criterion 4.

Subsequently, Westwood and Fuerstenberg (2017) carried out subsurface testing at the foundation of a former historic-era structure on July 20–21, 2017. Fieldwork included metal detection, surface survey and the excavation of eight shovel test probes (STPs) around the existing concrete pads to depths between 15 and 28 centimeters below surface (cmbs). This excavation resulted in the recovery of five wire nails, four masonry mortar fragments, and two brick fragments. Based on these findings they concluded that the site was an agricultural building occupied during the twentieth century.

Based on historical mapping, Westwood and Fuerstenberg (2017) concluded that it is possible that the site is associated with Bruce or Lucas, but this association is insufficient under Criterion 2/B. Similarly, there is no evidence that the site is associated with events important to history and the foundation lacks extant architecture and therefore cannot be eligible under Criterion 3/C. Finally, insufficient archaeological materials were recovered during excavation to conclude that the site has any research potential and it is not eligible under Criterion 4/D. Overall, the site was recommended as ineligible for listing on the California and National Registers and no further action was recommended.

### **Newly Identified Resources**

Two additional and previously unrecorded cultural resources were documented: the historic-era Crouch Ditch and a series of mine tailings along a shallow, seasonal drainage.

### *Crouch Ditch (CA-BUT-4209H)*

This ditch is depicted on USGS topographic maps as early as 1912. The ditch segment within the APE has been bisected by the Butte Creek Diversion Channel, and therefore has been recorded as two segments: Segment A, which is west of the channel, and Segment B, to the east. Segment A also includes the remains of what appears to be a dilapidated wooden footbridge or possibly a small check dam. Approximately 80 feet of the central portion of Segment B has been leveled by heavy equipment.

The Crouch Ditch is described as “a[n] historic irrigation canal” that “flows periodically and provides habitat to wild animals. It diverges from Butte Creek at a point roughly 2.5–3.0 miles east of the project area and continues west and south for several miles to where it merges into a series of sloughs, canals, and drains on the east side of the Sacramento River. Modern aerial photographs suggest that the segment east of the Butte Creek Diversion is abandoned.

Only that part of the ditch within the project parcels was recorded for this study, consisting of two segments that total 1,342 feet. The segments are separated by the Butte Creek Diversion Channel. This portion of the ditch is a shallow, earthen feature. The only associated feature is a collapsed wooden structure interpreted as a small footbridge or check dam, with 8-x-8 inch beams and 10-x-2-inch boards. One of the beams still straddles the ditch; the rest of the feature has fallen into the ditch. Many pieces are burnt and broken. Segment A runs between the Diversion Channel and Skyway Road, where it turns to parallel the road as a drainage ditch. Segment B, east of the Diversion Channel, appears to end just before it reaches Skyway Road.

### *Historical Background*

While the entire Crouch Ditch has not been evaluated for eligibility to the National Register or California Register, the portion in our study area does not appear to qualify for either register at the state or national level. However, the ditch could be eligible at the local and/or regional level for its association with the development of agriculture in Butte County (Criteria A/1), and for its association with the Crouch family, early pioneers in the county (Criteria B/2). It does not include physical elements that might embody distinctive artistic or engineering values (Criteria C/3); nor is the ditch likely to yield important information on local, regional, state, or national history (Criteria D/4), beyond its recordation. As to integrity, those segments of the ditch within the town of Chico have been channelized or otherwise altered, while those to the east, including the project area, appear to retain much of their original character and alignment.

In sum, the Crouch Ditch is recommended as eligible to the California Register under Criteria 1 and 2, at the local level of significance. However, any impacts to the sections within the project site have been mitigated through the recordation and archival research performed.

Westwood and Fuerstenberg (2017) conducted further archival research and determined that the ditch was constructed between 1895 and 1912, prior to its association with Crouch, who took ownership at a later date. While archival research suggests that it is associated with agriculture in Butte County, there is nothing to suggest that it was the earliest ditch or played an important role in the history of the county. Since the original builders of the ditch could not be

determined and since Crouch was not important to local history, the site is also not significant under Criterion 2/B. The ditch is typical of irrigation ditches and does not embody characteristics of a type, period, or method of manufacture and is not eligible under Criterion 3/C. Finally, there is no information potential that may be gained from further study of the ditch and it is not eligible under Criterion 4/D. The site is recommended as not eligible for listing on the California and National Registers and no further management actions are recommended.

*CA-BUT-4201H- Mine Tailings, Possible Privy, and Associated Artifacts*

This newly recorded historic-era resource, is a series of at least 18 discrete features. The features consist of piles of water-worn cobbles averaging roughly four to five feet in diameter and 18 inches tall; many other piles that lie side-by-side and form a nearly contiguous alignment along the bed of a shallow seasonal drainage; a partially in-filled pit, a concentration of late nineteenth or early twentieth-century domestic artifacts; and several low silt piles on a low terrace slightly above and parallel to the seasonal drainage. Artifacts found directly on the piles included a large, smashed bucket, two “church-key” opened beverage cans, and two bent sections of galvanized metal.

The area is part of the Butte Creek Watershed historic-era gold mining region, which drew local and international immigrants, starting in about 1850. The region was mined heavily between the 1850s and 1950s. A review of historic-era maps, histories, and records search results provided no direct information on who created the tailings features, or when. Online Land Patent Records maintained by the Bureau of Land Management list a Benjamin Franklin Potter as having filed a Homestead Entry on January 27, 1880, for 160 acres in Section 32, “Lot/Tract1” and “Lot/Tract 2”, which correspond to the location of the recoded tailings.

Because of the likelihood of additional artifacts and the possibility of structural remains, the presence of numerous discrete features reflecting small placer mining landscape and its association with a known household, the site may be eligible for the California and/or the National Register; however, it could not be formally evaluated at the survey level. For the sake of the project the site will be assumed eligible under the California Register under Criterion 4 and a data recovery plan will be developed and implemented prior to construction to realize the data potential of the site.

*LE-1P- Prehistoric Isolate*

A single isolated flake of dark grey cryptocrystalline silicate material was also recorded during the pedestrian survey. No additional evidence of prehistoric occupation was observed despite more intensive survey and removal of ground cover in the immediate area of the isolate. Isolates are, by definition, ineligible for listing on the National and California Registers. No further management of this isolate is recommended.

Westwood and Fuerstenberg carried out fieldwork on July 21, 2017. This included metal detection and subsurface archaeological testing. Five STPs were excavated based on visual inspection of the surface and metal detection results. The five units ranged in depth from 10–27 cmbs. Excavation resulted in the recovery of a modern beer can, several nail fragments, pieces



of aqua, clear, and brown glass, and various ceramic and metal artifact fragments. Westwood and Fuerstenberg (2017) concluded that the 70 artifacts recovered represent a mixture of domestic and industrial activities with some evidence of trash burning and perhaps more recent looting or prospecting. They concluded that the placer tailings were consistent with shallow placer mining using hand-screening techniques—this type of mining was common throughout the second half of the nineteenth century in California.

Although the property was owned by Potter, Bruce, and Lucas during the period of mining, there is no evidence that they, themselves were the miners. As a result, the site is not associated with people important to the past (Criterion 2/B). Similarly, there is no evidence that the site was associated with gold discovery or even fruitful mining and therefore is not associated with events important to the past (Criterion 1/A). Lacking architecture, the site does not embody characteristics of a type, period, or method of manufacture and is not eligible under Criterion 3/C. Finally, fieldwork in 2017 did not yield sufficient artifacts to answer regional research questions associated with regional history and the site lacks eligibility under Criterion 4/D. Taken together, the site is recommended not eligible for listing on the California and National Registers and no further management actions are recommended.

## REGULATORY SETTING

### Federal

#### *National Historic Preservation Act*

The National Historic Preservation Act of 1966 (“NHPA”), as amended, established the National Register of Historic Places (“NRHP”), which contains an inventory of the nation’s significant prehistoric and historic properties. As stated by 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets at least one of the following criteria:

- Association with significant events in history, or broad patterns of events.
- Association with significant people in the past.
- Embodiment of distinctive characteristics of an architectural type, period, or method of construction; or work of a master or possesses high artistic value; or representation of a significant and distinguishable entity whose components may lack individual distinction.
- Has yielded, or may yield, information important in history or prehistory.

Properties including religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are typically excluded from consideration for listing in the NRHP; however, they can be considered if they meet special requirements in addition to meeting the criteria listed above.

### State

#### *California Register of Historic Resources*

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (“CRHR”). The State Historic Preservation Office (“SHPO”) maintains the CRHR. Properties that are listed on the NRHP are automatically listed on the CRHR, along with State Landmarks and Points of Interest. The CRHR can also include properties designated under local ordinances or identified through local historical resource surveys.

#### *Tribal Consultation*

#### SB-18 Tribal Consultation

SB-18 Tribal Consultation; Government Code Section 65352.3 (“Senate Bill [SB] 18”) 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 or amendment of a general plan or specific plan. The purpose of this consultation is to preserve or mitigate impacts to cultural places.

#### AB-52 Tribal Cultural Resources

In September of 2014, the California Legislature passed Assembly Bill (“AB”) 52, which added provisions to the Public Resources Code concerning the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze a project’s impacts on “tribal cultural resources,” separately from archaeological resources (PRC Section 21074; 21083.09). The Bill defines “tribal cultural resources” in a new section of the PRC, Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, 21082.3). Finally, AB 52 requires the Office of Planning and Research to update Appendix G of the CEQA Guidelines by July 1, 2016 to provide sample questions regarding impacts to tribal cultural resources (PRC Section 21083.09). AB 52’s provisions apply to projects that have a notice of preparation filed on or after July 1, 2015.

#### *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 archaeologist should be contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of this identification.

According to Section 15064.5 of the CEQA Guidelines, all human remains are a significant resource. Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are spelled out under Public Resources Code Section 5097.

### **Local**

#### *City of Chico Municipal Code*

#### Historic Preservation Ordinance

A historic preservation ordinance of the Chico Municipal Code specifically affords protection for properties listed on the City’s Historic Resources Inventory and provides a mechanism to add historic properties to the Inventory through Landmark Overlay zoning districts. The ordinance also provides development incentives to owners of designated historic property and establishes a number of exempt activities such as ordinary maintenance and repair. Proposals to significantly alter or demolish structures listed on the City’s Historic Resources Inventory are reviewed by the City’s five-member Architectural Review and Historic Preservation Board. The Board also reviews nominations to the City’s Inventory and forwards recommendations to the City Council for a final determination of listing.

*City of Chico General Plan*

Policy CRHP-1.1 (Historic Preservation Program) – Maintain a comprehensive Historic Preservation Program that includes policies and regulations which protect and preserve the archaeological, 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 at CSU Chico.

Action CRHP-1.1.9 (Architectural Historian Consultation) – Use the California Historical Resources Information System (CHRIS) Consultant’s List to identify qualified architectural historians 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 Archaeology and Historical Preservation.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, a project would have a significant impact on cultural resources if the project would:

- (a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- (b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- (c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- (d) Disturb any human remains, including those interred outside of formal cemeteries.

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.

### *Historical Architectural Resources*

Pursuant to Section 15064.5 of the CEQA Guidelines, a historical resource (including both built environment and prehistoric archaeological resources) is presumed significant if the structure is listed on the CRHR or has been determined to be eligible for listing by the State Historical Resources Commission. An historical resource may also be considered significant if the lead agency determines, based on substantial evidence, that the resource meets the criteria for inclusion in the CRHR. The criteria are as follows:

1. The resource is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
2. The resource is associated with lives of persons important in our past;

3. The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. The resource has yielded, or may be likely to yield, information important in prehistory or history.

#### *Archaeological Resources*

Pursuant to Section 15064.5 of the CEQA Guidelines, archaeological resources, not otherwise determined to be historical resources, may be significant if they are unique. Pursuant to Public Resources Code Section 21083.2, a unique archaeological resource is defined as 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 one of the following criteria:

1. The resource contains information needed to answer important scientific questions and there is a demonstrable public interest in that information;
2. The resource has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
3. The resource is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource means an archaeological artifact, object, or site that does not meet the above criteria. Non-unique archaeological resources receive no further consideration under CEQA.

#### *Human Remains*

According to Section 15064.5 of the CEQA Guidelines, all human remains are a significant resource. Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are spelled out under Public Resources Code Section 5097.

#### *Paleontological Resources*

According to Appendix G of the CEQA Guidelines, a project could have a significant effect if it would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

### **Cultural Resources Impacts Not Further Analyzed**

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft EIR, and were determined to result in a less-than-significant impact and not warrant further analysis:

- Disturb any human remains, including those interred outside of formal cemeteries.

## Project Impacts and Mitigation Measures

### *Impact CULT-1: Historical Resources*

Two historic-era resources, BUT-1281H and BUT-2207H, were identified within the APE during the Records Search. Site BUT-2207H, a historic-era building foundation initially recorded in February 1992, was recommended at that time as ineligible for the National Register, however the recommendation was based on surface observations only. Based on historical mapping, Westwood and Fuerstenberg (2017) concluded that it is possible that the site is associated with Bruce or Lucas, but this association is insufficient under Criterion 2/B. Similarly, there is no evidence that the site is associated with events important to history and the foundation lacks extant architecture and therefore cannot be eligible under Criterion 3/C. Finally, insufficient archaeological materials were recovered during excavation to conclude that the site has any research potential and it is not eligible under Criterion 4/D. Overall, the site was recommended as ineligible for listing on the California and National Registers and no further action was recommended.

Similarly, BUT-1281H, initially recorded as a small segment of historic-era rock wall which was expanded to include two other connected segments, was also recommended as ineligible for the National Register, but with no supporting data. An earlier study by Swinglinger and Bayham (1988:3) reported that “the stone fence that still stands on Bruce and Humboldt Roads was built [for] Mr. Bruce in the early 1870s” and concluded “for both reasons of historic significance and their value as an intangible asset of the landscape, stone fences should be preserved when possible” (1988:5). The current project plan include cutting the fence to create two entrances to the property but maintaining the majority of the rock fence line as part of final design and therefore it would be preserved the resource to the maximum extent feasible. A less than significant impact regarding impacts to resource BUT-2207H would result.

An additional two historic resources and one isolate were identified through pedestrian survey; Crouch Ditch and Mine Tailings. Recordation and archival research performed for the project have mitigated any impacts to the sections of the ditch within the project parcel and no further action would be required. Furthermore, Westwood and Fuerstenberg (2017) conducted further archival research and determined that the ditch was constructed between 1895 and 1912, prior to its association with Crouch, who took ownership at a later date. While archival research suggests that it is associated with agriculture in Butte County, there is nothing to suggest that it was the earliest ditch or played an important role in the history of the county. Since the original builders of the ditch could not be determined and since Crouch was not important to local history, the site is also not significant under Criterion 2/B. The ditch is typical of irrigation ditches and does not embody characteristics of a type, period, or method of manufacture and is not eligible under Criterion 3/C. Finally, there is no information potential that may be gained from further study of the ditch and it is not eligible under Criterion 4/D. The site is recommended as not eligible for listing on the California and National Registers and no further management actions are recommended. A less than significant impact regarding the Crouch Ditch resource would occur.

The second newly recorded historic-era resource, CA-BUT-4209H, contains a relatively dense artifact locus, and at least 18 other features. Although the property was owned by Potter, Bruce, and Lucas during the period of mining, there is no evidence that they, themselves were the miners. As a result, the site is not associated with people important to the past (Criterion 2/B). Similarly, there is no evidence that the site was associated with gold discovery or even fruitful mining and therefore is not associated with events important to the past (Criterion 1/A). Lacking architecture, the site does not embody characteristics of a type, period, or method of manufacture and is not eligible under Criterion 3/C. Finally, fieldwork in 2017 did not yield sufficient artifacts to answer regional research questions associated with regional history and the site lacks eligibility under Criterion 4/D. Taken together, the site is recommended not eligible for listing on the California and National Registers and no further management actions are recommended. A **less than significant** impact regarding CA-BUT-4209H would occur.

*Impact CULT-2: Archaeological and Paleontological Resources*

The cultural resources studies conducted at the site resulted in the recovery by Far Western of 25 artifacts, consisting of a horseshoe nail, a child's doll fragment, a tablespoon, and several pieces of tableware vessels suggest a family occupation; the cut nails and window glass. Westwood and Fuerstenberg recovered 70 artifacts including a modern beer can, several nail fragments, pieces of aqua, clear, and brown glass, and various ceramic and metal artifact fragments. Westwood and Fuerstenberg (2017) concluded that the 70 artifacts recovered represent a mixture of domestic and industrial activities with some evidence of trash burning and perhaps more recent looting or prospecting. They concluded that the placer tailings were consistent with shallow placer mining using hand-screening techniques—this type of mining was common throughout the second half of the nineteenth century in California. Although the property was owned by Potter, Bruce, and Lucas during the period of mining, there is no evidence that they, themselves were the miners. As a result, the site is not associated with people important to the past (Criterion 2/B). Similarly, there is no evidence that the site was associated with gold discovery or even fruitful mining and therefore is not associated with events important to the past (Criterion 1/A). Lacking architecture, the site does not embody characteristics of a type, period, or method of manufacture and is not eligible under Criterion 3/C. Finally, fieldwork in 2017 did not yield sufficient artifacts to answer regional research questions associated with regional history and the site lacks eligibility under Criterion 4/D. Taken together, the site is recommended not eligible for listing on the California and National Registers. Despite the negative findings on the site, there is still the potential for accidental discovery of archeological or paleontological resources. The potential for discovery and disturbance of any of these resources during excavation is considered potentially significant.

Implementation of *Mitigation Measure CULT-2* would ensure that potentially significant impacts to archaeological and paleontological resources are reduced to a **less-than-significant** level.



*Mitigation Measure CULT-2: Archaeological and Paleontological Resources*

Prior to the start of grading operations for each phase of the project the Applicant shall provide reasonable notice and site access for a tribal representative to be present at the project site during any ground disturbing activities in areas mapped by the Mechoopda Indian Tribe of Chico Rancheria as High Sensitivity areas. If any archaeological or paleontological deposits are encountered, all soil-disturbing work shall be halted at the location of any discovery until a qualified archaeologist or paleontologist evaluates the significance of the find(s) and prepares a recommendation for further action. If the project site is expanded beyond its current limits, additional cultural resource studies shall be required.

**LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Implementation of the mitigation measures prescribed above would reduce significant project impacts on prehistoric archeological and paleontological resources to a ***less-than-significant*** level.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### F. GEOLOGY AND SOILS

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#### INTRODUCTION

This section of the DEIR evaluates potential impacts to the project site's geologic environment that may result from implementation of the Stonegate Vesting Subdivision Map and General Plan Amendment/Rezone ("proposed project"). The information and analysis in this section is based published and unpublished geologic reports and maps from the United States Geological Survey (USGS) and California Geological Survey (CGS).

#### ENVIRONMENTAL SETTING

##### Geology

The project site is located within the Great Valley Geomorphic Province (Great Valley Province). The Great Valley Province extends 400 miles north to south and 50 miles east to west and is encompassed by the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Sierra Nevada to the east. The Great Valley Province is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago).<sup>1</sup>

##### Topography

The topography of the City of Chico varies from relatively gently sloped terrain in the western portion to increasingly hilly terrain at the eastern edge of the city.<sup>2</sup> The project site is generally level undeveloped land, gradually sloping up to the northeast from elevations of 225 feet at its south border along Skyway to 267 feet on the north border along E. 20th Street.

##### Seismic Conditions

The severity of an earthquake is measured by magnitudes and intensities. Magnitude is a measure of the energy released by an earthquake. Intensity is a subjective measure of the perceptible effects of an earthquake at a given point and varies with distance from the epicenter and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of earthquake intensity and is shown in Table IV.F-1 below.

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<sup>1</sup> CGS, 2002. *California Geomorphic Provinces, Note 36. Revised December.*

<sup>2</sup> City of Chico, 2010. *General Plan Update Draft Environmental Impact Report, Geology and Soils. September.*

**Table IV.F-1  
Modified Mercalli Intensity (MMI) Scale**

<b>Category</b>	<b>Description (Subjective Effects of Earthquake Intensity) <sup>3</sup></b>
I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; unstable objects overturned. Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

The nearest active fault to the project site is the Cleveland Hills Fault, approximately 22 miles southeast of the project site.<sup>4</sup> According to CGS and USGS, the project site is located in areas distant from known, active faults and is expected to experience infrequent low levels of shaking relative to many parts of the state. During most earthquakes, only weaker, masonry buildings would likely be damaged. However, very infrequent more intense earthquakes could still cause strong shaking at the project site.<sup>5</sup>

<sup>3</sup> USGS, 2016. *The Severity of an Earthquake*. Website: <http://pubs.usgs.gov/gip/earthq4/severitygip.html>. Accessed June 19, 2017.

<sup>4</sup> California Department of Conservation, 2010. *Fault Activity Map of California*. Website: <http://maps.conservation.ca.gov/cgs/fam/>. Accessed June 19, 2017.

<sup>5</sup> CGS and USGS, 2016. *Earthquake Shaking Potential for California*.

## Geologic Hazards

### *Active Faults and Fault Rupture*

An active fault is defined by the CGS as one which has had surface displacement in the past 11,000 years. No active faults have been mapped at the project site. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally occurs along an existing (usually active) fault trace. Areas susceptible to surface fault rupture are delineated by the CGS Alquist-Priolo Earthquake Fault Zones and require specific geological investigations prior to development to reduce the threat to public health and safety and to minimize the loss of life and property posed by earthquake induced ground failure. The project site is not located within or adjacent to a mapped Alquist-Priolo Earthquake Fault Zone.<sup>6</sup>

### *Ground Shaking*

Ground shaking is a general term referring to the motion of the earth's surface resulting from an earthquake. Ground shaking is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of an earthquake, distance from the epicenter, and local geologic conditions.

According to the City of Chico General plan, Chico and the surrounding area are relatively free from significant seismic and geologic hazards. There are no known or inferred active faults, however, faults located outside of the City could result in strong ground shaking within the City. The City enforces the state building code which mandates construction techniques that minimize seismic hazards.<sup>7</sup>

### *Liquefaction*

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes a temporary loss of strength, which commonly causes ground displacement or ground failure to occur.

CGS has mapped Seismic Hazard Zones that delineate areas susceptible to liquefaction that require additional investigation to determine the extent and magnitude of potential ground failure. According to CGS, the project site is not located within or adjacent to a mapped Seismic Hazard Zones for liquefaction.<sup>8</sup>

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<sup>6</sup> California Department of Conservation, 2017. Website: <http://maps.conservation.ca.gov/cgs/informationwarehouse/>. Accessed June 27

<sup>7</sup> City of Chico, 2011, General Plan Safety Element, page 12-11

<sup>8</sup> California Department of Conservation, 2017. Op. cit.

Based on the Butte County Liquefaction Potential Map, most of the project site has a generally low susceptibility to liquefaction hazards. However, a small portion of the project site has a generally moderate susceptibility to liquefaction hazards.<sup>9</sup>

### *Landslides*

Slope failure can occur as either rapid movement of large masses of soil (landslide) or imperceptibly slow movement of soils on slopes (creep). The primary factors influencing the stability of a slope are the nature of the underlying soil or bedrock, the geometry of the slope (height and steepness), and rainfall. The presence of historic landslide deposits is a good indicator of future landslides. Landslides are commonly triggered by unusually high rainfall and the resulting soil saturation, by earthquakes, or a combination of these conditions.

CGS has mapped Seismic Hazard Zones that delineate areas susceptible to landslides that require additional investigation to determine the extent and magnitude of potential ground failure. According to CGS, the project site is not located within or adjacent to a mapped Seismic Hazard Zones for landslides.<sup>10</sup> In addition, the project site is generally level. Based on the Butte County Landslide Potential Map, the project site has a low susceptibility to landslides hazards.<sup>11</sup>

### *Expansive Soils*

Expansive soils expand and contract in response to changes in soil moisture, most notably when near-surface soils change from saturated to a low moisture content condition, and back again. These changes can result in damage to building foundations, pavement, and other structural elements. Based on the City of Chico General plan Safety Element, the project site is located in an area of highly expansive soils.<sup>12</sup>

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<sup>9</sup> Butte County, 2007. *Butte County General Plan, Setting & Trends Report Public Draft*. August 2.

<sup>10</sup> California Department of Conservation, 2017. *Op. cit.*

<sup>11</sup> Butte County, 2007. *Op. cit.*

<sup>12</sup> City of Chico, 2011, *General Plan Safety Element, Figure S-3*.

## REGULATORY SETTING

The following discussion describes the regulatory context (including regulatory agencies and policy documents) for geologic and seismic issues as they relate to development on the project site.

### Federal Regulations

#### *National Earthquake Hazards Reduction Program*

The National Earthquake Hazards Reduction Program (NEHRP) was established by the US Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law (PL) 95–124. In establishing NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic NEHRP goals are:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide State, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

### State Regulations

#### *Alquist-Priolo Earthquake Fault Zoning Act (AP Act)*

The AP Act was passed in 1972, and its main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active earthquake faults. The AP Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. "Earthquake Fault Zones" were called "Special Studies Zones" prior to January 1, 1994. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. The AP Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. Surface rupture is the most easily avoided seismic hazard. As discussed above, the project site is not located within or adjacent to a mapped Alquist-Priolo Earthquake Fault Zone. As discussed below, the Seismic Hazards Mapping Act (SHMA), passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides.

### *Seismic Hazards Mapping Act (SHMA)*

The SHMA of 1990 (Public Resources Code, Section 2690- 2699.6) directs the Department of Conservation, CGS to identify and map areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to minimize loss of life and property through the identification, evaluation and mitigation of seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake. Staff geologists in the Seismic Hazard Zonation Program gather existing geological, geophysical and geotechnical data from numerous sources to produce the Seismic Hazard Zone Maps. They integrate and interpret these data regionally in order to evaluate the severity of the seismic hazards and designate as Zones of Required Investigation (ZORI) those areas prone to liquefaction and earthquake-induced landslides. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations be conducted within ZORI areas to identify and evaluate seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy. As discussed above, the project site is not located within or adjacent to a mapped Seismic Hazard Zones for liquefaction and/or landslides.

### *California Building Code*

The 2016 California Building Code (CBC), which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations, is based on the 2012 International Building Code. The 2016 CBC covers grading and other geotechnical issues, building specifications, and non-building structures. The CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards. Buildings less than or equal to 4,000 square feet also are required to prepare a geologic engineering report, except for one-story, wood-frame and light-steel-frame buildings of Type V construction that are located outside of the Alquist-Priolo Earthquake Faults Zones.

The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. Requirements for the geotechnical investigation are presented in Chapter 16 “Structural Design” and Chapter 18 “Soils and Foundation” of the 2016 CBC.

City of Chico enforces the CBC. Therefore, the project design and construction is required to conform with, or exceed, current best standards for earthquake resistant construction in accordance with the 2016 CBC and with the generally accepted standards of geotechnical practice for seismic design in Northern California. In addition, because the project would involve developments of one or more buildings greater than 4,000 square feet, a site specific geotechnical investigation is required for the project by the 2016 CBC.



## **Local Regulations**

### *City of Chico General Plan*

The following goals, policies and actions are included in the City of Chico General Plan.

#### **Goal S-3: 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.

Action S-3.1.2 (Potential Soil Hazards) – In areas with highly expansive soils, require appropriate studies and structural precautions through project review.

## ENVIRONMENTAL IMPACTS

### Methodology

#### Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project could have a significant environmental impact if it would:

- a) Expose people or structures to 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?
- b) Result in substantial soil erosion or the loss of topsoil?
- c) 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?
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e) 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?

#### Geology and Soils Issues not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft EIR, and were determined to result in a less-than-significant impact and not warrant further analysis:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: landslides.
- 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.

## Project Impacts and Mitigation Measures

*Impact GEO-1: The proposed project would not expose people or structures to potential substantial adverse effects associated with seismic hazards.*

### Fault Rupture

The project site is not located within or adjacent to a mapped Alquist-Priolo Earthquake Fault Zone, and therefore the project would have a ***less-than-significant*** impact on people and structures related to fault rupture.

### Seismic Ground Shaking

The project site is located in areas distant from known, active faults and is expected to experience infrequent low levels of shaking relative to many parts of the state. However, very infrequent and more intense earthquakes could still cause strong shaking at the project site.

The potential impacts related to injuries of future site users resulting from seismic ground shaking would be reduced by adherence to the design and materials standards set forth in the 2016 CBC. The City enforces the state building code which mandates construction techniques that minimize seismic hazards. Therefore, impacts related to seismic ground shaking would be ***less than significant***.

### Seismic-Related Ground Failure

As discussed above, the project site is not located within or adjacent to a mapped Seismic Hazard Zones for liquefaction. In addition, most of the project site has a generally low susceptibility to liquefaction hazards based on the Butte County Liquefaction Potential Map. However, a small portion of the project site has a generally moderate susceptibility to liquefaction hazards (based on regional mapping).

It is possible that regional seismic shaking could result in liquefaction and failure of project site soils, which could cause significant damage to proposed project structures. This type of damage could also injure building occupants. While liquefaction could occur on the project site, the proposed project would not increase or exacerbate the liquefaction hazards. Based on the rulings of the California Second District Court of Appeals (*Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal. App. 4th 455) and the California Supreme Court (*California Building Industry Association vs. Bay Area Air Quality Management District*), a CEQA analysis of the effects of geologic hazards on a proposed project is not required if the project does not exacerbate the existing condition. Therefore, potential liquefaction hazard on the project would result in a ***less than significant*** impact. However, it is recommended that the City require the applicant to prepare a site-specific geotechnical report which includes an evaluation of the potential liquefaction hazard (and if a hazard is confirmed, appropriate measures to address the hazard).

*Impact GEO-2: The proposed project may result in substantial soil erosion or the loss of topsoil.*

During the construction phase of the proposed project, grading would result in the disturbance of surface soils.

As described in detail in Section IV.I Hydrology and Water Quality, compliance with the Construction General Permit, including the preparation and implementation of a Stormwater Pollution Prevention Plan, would reduce the potential impacts related to erosion of topsoil to a **less-than-significant** level.

During the operation phase of the project, soils would be covered with buildings, pavement, and landscaping and not subject to erosion, therefore potential post-construction impacts related to erosion of topsoil would be **less than significant**.

*Impact GEO-3: The proposed project would not be exposed to hazards associated with unstable geologic units or soils.*

Since the project site is relatively flat and regional mapping indicates that landslide hazards are low to non-existent in the vicinity, the impacts related to landslides on the project site would be **less than significant**.

Lateral spreading (or liquefaction-induced lateral spreading) refers to the horizontal movement of sloping ground as a result of pore pressure build-up or liquefaction in shallow soils during an earthquake. Lateral spreading hazards tend to occur where liquefaction hazards are present. While liquefaction is a potential concern at the project site (discussed above under the Seismic Shaking subsection), the site is relatively flat and therefore the lateral spreading hazard is considered low.

Subsidence is a form of settlement, resulting in the lowering of the land surface elevation due to groundwater pumping and subsequent consolidation of loose aquifer sediments. No groundwater pumping is proposed under the project, and therefore this potential impact is **less than significant**.

The impacts related to liquefaction on the project site is discussed above under “Seismic-Related Ground Failure”.

*Impact GEO-4: The proposed project would not be exposed to hazards associated with expansive soils.*

Based on the City of Chico General plan Safety Element, the project site is located in an area of highly expansive soils. General Plan Action S-3.1.2 (Potential Soil Hazards) states that “in areas with highly expansive soils, require appropriate studies and structural precautions through project review.” In accordance with Action S-3.1.2, the City would require the applicant to prepare and submit a geotechnical investigation report that characterizes the expansive soil hazards and specifies geotechnical treatments to address any hazards identified. These treatments may include removal and replacement of expansive soils in areas of building foundations, pavements, and utility trenches or injecting or mixing of lime or other solutions into existing expansive soils.

Since preparation of appropriate studies and implementation of structural precautions are required under existing programs, the impact related to expansive soils is ***less than significant***.

## **LEVEL OF SIGNIFICANCE AFTER MITIGATION**

All project impacts related to geology and soils are ***less-than-significant***. No mitigation is required.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### G. GREENHOUSE GAS EMISSIONS

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#### INTRODUCTION

This section describes the expected emissions of greenhouse gases (GHGs) generated during the construction and operational phases of the proposed project and has been prepared in accordance with the most recent version of the Butte County Air Quality Management District (BCAQMD) CEQA Guidelines.<sup>1</sup>

The BCAQMD CEQA Handbook details operational measures recommended by BCAQMD to reduce air emissions. Table IV-G.1 provides an analysis of the applicability of each project operational measure and where possible, details how implementation of the measure is quantified for the calculation of the mitigated operational criteria pollutant emissions conditions.

The project is consistent with the following operational measures recommended by BCAQMD to reduce air emissions.

**Table IV.G-1. Project Environmental Commitments**

<b>BCAQMD's Standard Mitigation Measures</b>	<b>Applicability to Project</b>	<b>Quantification of Mitigation Measure</b>
Provide a pedestrian-friendly and interconnected streetscape to make walking more convenient, comfortable and safe (including appropriate signalization and signage);	The project includes 5-foot wide sidewalks along all new and enhanced street frontages.	No emissions reductions were taken.
Provide good access to/from the development for pedestrians, bicyclists, and transit users	The project design supports multiple modes of travel by including bike paths, sidewalks, and bus stops as required by <i>Mitigation Measure TRANSPORTATION-5</i>	No emissions reductions were taken.
Pave and maintain the roads and parking areas;	All roads and parking areas will be paved as required by the City's Municipal Code.	No emissions reductions were taken.
Driveway design standards (e.g., speed bumps, curved driveway) for self-enforcing of reduced speed limits for unpaved driveways;	The project has been designed to meet City's Municipal Code, which includes streets designed for low speeds.	No emissions reductions were taken.
Development is within 1/4 mile of transit centers and transit corridors;	The project will create the ability for new bus lines, as required in <i>Mitigation Measure TRANSPORTATION-5</i> .	No emissions reductions were taken.

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<sup>1</sup> BCAQMD, 2014. CEQA Air Quality Handbook. October 23.

Design and build compact communities in the urban core to prevent sprawl;	The project is located adjacent to existing residential and commercial uses and would connect these uses to create cohesive infill development.	No emissions reductions were taken.
Increase density within the urban core and urban reserve lines;	The project is located adjacent to existing residential and commercial uses and would connect these uses to create cohesive infill development.	No emissions reductions were taken.
For projects adjacent to high-volume roadways, plant vegetation between receptor and roadway;	The project includes a masonry wall and landscaping buffer that separates roadways from receptors.	No emissions reductions were taken.
No residential wood burning appliances;	The local air district prohibits wood burning appliances in new development.	No emissions reductions were taken.
Incorporate traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs and intersection designs that reduce vehicles speeds and encourage pedestrian and bicycle travel;	The project has been designed to meet City's Municipal Code, which includes narrow street width and low design speeds for local roads.	No emissions reductions were taken.
Increase number of connected bicycle routes/lanes in the vicinity of the project;	The project has been designed to meet City's Municipal Code, which includes provisions for bicycle lanes along new and existing streets.	No emissions reductions were taken.
Provide easements or land dedications and construct bikeways and pedestrian walkways;	The project has been designed to include the dedication and construction of bike paths and pedestrian walkways.	No emissions reductions were taken.
Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel to adjacent land uses;	The project has been designed to connect existing dead-end streets and minimizes creation of cul-de-sacs and dead-end streets.	No emissions reductions were taken.
Develop recreational facility (e.g., parks, gym, pool, etc.) within one-quarter of a mile from site;	The project includes a park and large public open space with viewing points.	No emissions reductions were taken.
If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.);	<i>Mitigation Measure</i> TRANSPORTATION-6 requires that the project applicant consult with BCAG to provide new transit route options. A future transit route is anticipated along Bruce Road.	No emissions reductions were taken.
Provide storage space in garage for bicycle and bicycle trailers, or covered racks / lockers to serve the residential units; and	Homes associated with the project would include the ability to securely store bicycles and bicycle trailers within their garages.	No emissions reductions were taken.
Develop core commercial areas within 1/4 to 1/2 miles of residential housing or industrial areas	The project includes commercial uses with its boundaries. Additional commercial areas are located with 1/2 mile of portions of the project site.	No emissions reductions were taken.



## ENVIRONMENTAL SETTING

Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by humankind) atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide. Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Solar radiation enters the earth's atmosphere from space, and a portion of the radiation is absorbed at the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect helps maintain a habitable climate. Emissions of GHGs from human activities, such as electricity production, motor vehicle use, and agriculture, are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the earth's natural climate, known as global warming or global climate change. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred because it implies that there are other consequences to the global climate in addition to rising temperatures. Other than water vapor, the primary GHGs contributing to global climate change include the following gases:

- Carbon dioxide (CO<sub>2</sub>), primarily a byproduct of fuel combustion;
- Nitrous oxide (N<sub>2</sub>O), a byproduct of fuel combustion; also associated with agricultural operations such as the fertilization of crops;
- Methane (CH<sub>4</sub>), commonly created by off-gassing from agricultural practices (e.g. livestock), wastewater treatment and landfill operations;
- Chlorofluorocarbons (CFCs) were used as refrigerants, propellants and cleaning solvents, but their production has been mostly prohibited by international treaty;
- Hydrofluorocarbons (HFCs) are now widely used as a substitute for chlorofluorocarbons in refrigeration and cooling; and
- Perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>) emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

These gases vary considerably in terms of Global Warming Potential (GWP), a term developed to compare the propensity of each GHG to trap heat in the atmosphere relative to another GHG. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time of gas remains in the atmosphere. The GWP of each GHG is measured relative to CO<sub>2</sub>. Accordingly, GHG emissions are typically measured and reported in terms of equivalent CO<sub>2</sub> (CO<sub>2</sub>e).

An expanding body of scientific research supports that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally-occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater

intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Effects of global climate change that adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

## REGULATORY SETTING

### Federal Regulations

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). At this time, there are no federal regulations or policies directly pertaining to GHG emissions from proposed actions like the project.

### State Regulations

The State of California is concerned about GHG emissions and their effect on global climate change. The State recognizes that “there appears to be a close relationship between the concentration of GHGs in the atmosphere and global temperatures” and that “the evidence for climate change is overwhelming.” The effects of climate change on California, in terms of how it would affect the ecosystem and economy, remain uncertain. The State has many areas of concern regarding climate change with respect to global warming. According to the 2006 Climate Action Team Report, the following climate change effects and conditions can be expected in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70 percent to 90 percent, affecting the state’s water supply;
- Increasing temperatures from 8 to 10.4 degrees Fahrenheit (°F) under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution standards are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased challenges for the state’s important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

#### *Assembly Bill 1575 (1975)*

In 1975, the Legislature created the California Energy Commission (CEC). The CEC regulates electricity production that is one of the major sources of GHGs.

#### *Title 24, Part 6 of the California Code of Regulations (1978)*

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California’s energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

#### *Assembly Bill 1493 (2002)*

Assembly Bill (AB) 1493 required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks.

*State of California Executive Order S-3-05 (2005)*

The Governor's Executive Order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels.

In June 2005, the Governor of California signed Executive Order S-3-05, which identified Cal/EPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. A "Climate Action Team," a multi-agency group of State agencies, was set up to implement Executive Order S-3-05. Under this order, the State plans to reduce GHG emissions to 80 percent below 1990 levels by 2050. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)/Senate Bill 32 (SB 32, 2016)

AB 32, the Global Warming Solutions Act of 2006, codifies the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. The Scoping Plan recommends a GHG reduction target for local governments of 15 percent below 2005 emission levels by 2020, which is regarded as equivalent to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e) as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 million metric tons of CO<sub>2</sub>e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 million metric tons of CO<sub>2</sub>e. Thus, an estimated reduction of 80 million metric tons of CO<sub>2</sub>e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB published a second update to the Scoping Plan<sup>2</sup> to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

*Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)*

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. Plan Bay Area, adopted in 2013, is the first Bay Area Regional Transportation Plan (RTP) to incorporate the state-mandated Sustainable Communities Strategy (SCS). As a cooperative effort between MTC and ABAG, Plan Bay Area establishes performance targets for meeting the SCS Bay Area goals of a 7 percent per capita reduction in GHG emissions by 2020 and a 15 percent per capita reduction by 2035.

*Executive Order S-13-08 (2008)*

This Executive Order directed California agencies to assess and reduce the vulnerability of future development projects to impacts associated with sea-level rise.

*SB 350 Renewable Portfolio Standards*

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

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<sup>2</sup> CARB, 2017. *California's 2017 Climate Change Scoping Plan*. November.

### *Statewide GHG Emissions Inventory*

The California Greenhouse Gas Emission Inventory – 2017 Edition (released June 6, 2017) indicates that total California emissions in 2015 were 440.4 MMT of CO<sub>2</sub>e<sup>3</sup>. Approximately 37 percent of these emissions were associated with transportation (i.e., all sectors), followed by the Industrial sector at 21 percent and the Electric Power sector at 19 percent. The statewide inventory was estimated to have peaked in 2004. The current 2015 inventory is estimated to represent an overall decrease of 10 percent from 2004 levels.

### **Regional Regulations**

BCAQMD is the lead agency in developing plans to address air quality and GHG emissions in Butte County. The District also has permit authority over most types of stationary equipment. The BCAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

The BCAQMD *CEQA Air Quality Handbook*<sup>4</sup> was prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the County. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions.

### **Local Regulations**

The Chico City Council adopted 2020 Climate Action Plan (CAP)(2011), which contains GHG emission reduction targets that exceed AB 32 goals. The CAP established an overall GHG reduction goal of 25 percent (as opposed to 15 percent) below 2005 base-year emission levels to be achieved by 2020. The City has subsequently tracked progress toward meeting this 25 percent reduction goal by conducting high-level community-wide emissions inventories, consistent with guidance contained in the *U.S. Community Protocol for Accounting & Reporting GHG Emissions* developed by the International Council for Local Environmental Initiatives.

According to a 2018 inventory report, the City's 2005 baseline emissions level was approximately 652,275 MT CO<sub>2</sub>e, which corresponds to a per capita emissions rate of 8.25 MT CO<sub>2</sub>e/person.<sup>5</sup> By 2015, emissions had been reduced to approximately 507,516 MT CO<sub>2</sub>e, or 5.5 MT CO<sub>2</sub>e/person. Using the 2005 baseline level developed for the inventories, the minimum reduction target consistent with the goals of AB 32 for the year 2020 is 554,434 MT CO<sub>2</sub>e, or approximately 5.9 MT CO<sub>2</sub>e/person.

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<sup>3</sup> See [https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2015/ghg\\_inventory\\_trends\\_00-15.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ghg_inventory_trends_00-15.pdf) accessed June 8, 2017

<sup>4</sup> Butte County Air Quality Management District, 2014. *CEQA Air Quality Handbook*. October.

<sup>5</sup> City of Chico, 2018. *Community-Wide Greenhouse Gas Emissions Inventory 2005-2015*.

Although the City's Climate Action Plan and subsequent progress reports do not identify an emissions reduction target beyond 2020, a 2030 target consistent with SB 32 can be calculated from the sources above. To meet an emissions target consistent with SB 32 (which is 40 percent below the 2020 target set forth by AB 32), the City would have to further reduce total emissions to 332,660 MT CO<sub>2</sub>e by 2030. Using the estimated 2030 forecast population for Chico of 110,644 persons (see Population and Housing Chapter), the SB 32 target corresponds to a per capita emissions rate of 3.0 MT CO<sub>2</sub>e/person.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

In accordance with Appendix G of Title 14, Chapter 3 of the California Code of Regulations (CCR's), the proposed project would have a significant environmental impact if it would:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Since there is no adopted threshold by BCAQMD, this Draft EIR instead uses the thresholds of significance adopted by the Bay Area Air Quality Management District (BAAQMD in May 2010 (BAAQMD, 2010). The BAAQMD thresholds were originally developed for project operation impacts only. Therefore, combining both the construction emissions and operation emissions for comparison to the threshold represents a conservative analysis of total greenhouse gas impacts. GHG gas impacts are, by their nature, cumulative impacts.

The project would have a significant impact on climate change if it would do any of the following:

Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, specifically:

- Project-Level Impacts: For a project involving a land use development, produce total emissions of more than 1,100 metric tons of CO<sub>2</sub>e annually **AND**<sup>6</sup> more than 4.6 metric tons of CO<sub>2</sub>e per service population annually.<sup>7</sup> The project's impact would be cumulatively considerable if the emissions exceed the 1,100 metric tons threshold, and cumulatively significant if it exceeds the 4.6 metric tons threshold per service population. Accordingly, the impact would be considered less than significant if the project's emissions are below **EITHER** of these thresholds.

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<sup>6</sup> The BAAQMD CEQA Guidelines state that the project would have a less-than-significant impact if CO<sub>2</sub>e emissions do not exceed the 1,100 metric tons threshold AND the 4.6 metric tons per service population threshold. Because Chico's thresholds are structured to indicate when a project would have a significant impact, the thresholds are presented here such that the project would have a significant impact if it exceeded the 1,100 metric tons threshold AND the 4.6 metric tons per service population threshold.

<sup>7</sup> The service population includes both the residents and the employees of the project. BAAQMD recommends use of the 4.6 metric tons per service population threshold for large and mixed-use projects. (2011 BAAQMD Update at D-22 and D-27.)



## Project Impacts and Mitigation Measures

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact (1,100 metric tons of CO<sub>2</sub>e per year and at least 4.6 metric tons of CO<sub>2</sub>e per service population) on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

### CalEEMod Modeling

CalEEMod was used to estimate GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

#### *Land Uses*

The proposed project land uses were input into CalEEMod, which included: 469 dwelling units entered as “Single Family Housing,” 233 dwelling units entered as “Apartments Low Rise,” 205,000 square feet (sf) entered as “Medical Office Building”/commercial, and 240,000 sf entered as “Strip Mall”/retail. The CalEEMod input and output values are contained in Appendix C.

#### *Model Year*

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest year estimated for full project build-out and operation is 2035.

#### *Trip Generation Rates*

CalEEMod allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project traffic report. This included the trip reductions for mixed-use internal trips, shift to alternate modes of transportation (i.e., walk, bike and transit), and retail pass-by. The CalEEMod default trip lengths were modified based on ACS Census data and information provided by the Butte County Association of Governments (BCAG).<sup>8</sup> The CalEEMod defaults for fleet mix were adjusted based on data from multiple traffic counts collected by the Chico Public Works Department.

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<sup>8</sup> Available online: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed: March 12, 2018.

### *Energy*

CalEEMod defaults for energy use were used, which are assumed to include 2016 Title 24 Building Standards.

One adjustment was made to CalEEMod for GHG modeling. CalEEMod has a default rate of 641.3 pounds of CO<sub>2</sub> per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The rate was adjusted to account for PG&E's projected 2020 CO<sub>2</sub> intensity rate. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 290 pounds of CO<sub>2</sub> per megawatt of electricity delivered.<sup>9</sup>

### *Other Inputs*

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project. No new wood-burning stoves or fireplaces are allowed in Butte County, but it was assumed that 25 percent of new single-family residences could include gas-powered fireplaces. The consumer products emission factor was updated to reflect the latest emission information from CARB.<sup>10</sup> The landfill capture rate was updated to 90 percent based on correspondence with Bill Mannel, Solid Waste Manager for Butte County.<sup>11</sup> Based on correspondence with Jason Mandly, Planner at BCAQMD, the interior and exterior architectural coatings factor was updated to 150 g/L.<sup>12</sup>

### *Per Capita Emissions*

The project population is based on the number of future residents. The number of future residents was calculated as approximately 1,734 based on 2.47 average persons per household.

### **Construction Emissions**

GHG emissions associated with construction were computed to be a maximum of 1,489 MT of CO<sub>2</sub>e in 2022. Construction emissions would fluctuate over the heaviest anticipated build-out period (2022-2038), generally hovering around 1,350 MT CO<sub>2</sub>e per year between 2028 and 2038. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BCAQMD has established a threshold of significance for construction-related GHG emissions.

### Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project.

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<sup>9</sup> Pacific Gas & Electric, 2015. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. November.

<sup>10</sup> CARB, 2013. *The California Almanac of Emissions and Air Quality*.

<sup>11</sup> Personal correspondence with Bill Mannel, Solid Waste Manager, Butte County.

<sup>12</sup> Personal correspondence with Jason Mandly, Associate Planner, BCAQMD.

In 2035, as shown in Table IV.G-2, annual emissions resulting from operation of the proposed project are predicted to be 5.2 MT of CO<sub>2</sub>e service population per capita, which would exceed the significance threshold of 4.6 MT of CO<sub>2</sub>e service population per capita per year. Project GHG emissions would be considered **significant**. Implementation of *Mitigation Measure GHG-1/AIR-2C* would reduce project GHG emissions (see Table IV.G-3), but not a level a level of less than significant. Therefore, this impact would remain **significant and unavoidable**.

**Table IV.G-2. Annual Project GHG Emissions (CO<sub>2</sub>e) in Metric Tons**

Source Category	Proposed Project 2035
Area	216
Energy Consumption	2,314
Mobile	9,485
Solid Waste Generation	1,459
Water Usage	206
Total	13,680
<b>Threshold</b>	<b>1,100 MT of CO<sub>2</sub>e/per year</b>
<b>Cumulatively Considerable?</b>	<b>Yes</b>
Service Population Capita Emissions <sup>1</sup>	<b>5.2</b>
<b>Threshold</b>	<b>4.6 MT of CO<sub>2</sub>e/capita</b>
<b>Significant?</b>	<b>Yes</b>

<sup>1</sup> Based on an estimated service population 1,734 Residents + 890 Employees, Total 2,624

**Table IV.G-3. Mitigated Annual Project GHG Emissions (CO<sub>2</sub>e) in Metric Tons**

<b>Source Category</b>	<b>Proposed Project 2035</b>
Area	216
Energy Consumption	2,300
Mobile	9,485
Solid Waste Generation	1,459
Water Usage	206
Mitigated Total	13,666
<b>Threshold</b>	<b>1,100 MT of CO<sub>2</sub>e/per year</b>
<b>Cumulatively Considerable?</b>	<b>Yes</b>
Service Population Capita Emissions <sup>1</sup>	<b>5.2</b>
<b>Threshold</b>	<b>4.6 MT of CO<sub>2</sub>e/capita</b>
<b>Significant?</b>	<b>Yes</b>

<sup>1</sup> Based on an estimated service population 1,734 Residents + 890 Employees, Total 2,624

*Mitigation Measure AIR-2C/GHG-1:*

The project applicant shall implement the following BCAQMD-recommended operational mitigation measures:

1. Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools;
2. Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles;
3. Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible;
4. Final designs shall consider buildings that include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design);
5. Utilize high efficiency gas or solar water heaters;
6. Utilize built-in energy efficient appliances (i.e., Energy Star);
7. Utilize double-paned windows;
8. Utilize low energy street lights (i.e. light-emitting diode);
9. Utilize energy-efficient interior lighting;
10. Utilize low-energy traffic signals (i.e., light-emitting diode);
11. The project shall meet all title 24 requirements, including but not limited to:
  - a. Install door sweeps and weather stripping (if more efficient doors and windows are not available);
  - b. Install energy-reducing programmable thermostats;
  - c. Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs.
12. Prior to the recordation of each Final Map, to the extent that cumulative project operational emissions exceed applicable thresholds the project applicant shall participate in an Off-site Mitigation Program coordinated through the Butte County Air Quality Management District (BCAQMD). The project applicant shall utilize a methodology based on the BCAQMD CEQA Handbook with final details to be approved by the BCAQMD and City for calculating the payment to the Off-site Mitigation Program.

*Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?*

The City of Chico adopted the City of Chico 2020 Climate Action Plan (2012), which contains greenhouse gas emission reduction targets consistent with AB 32.

For new developments in the City, the Climate Action Plan has provided the following list of measures in Table IV.G-4, which are to be applied on a project-by-project basis in order to ensure compliance with the Climate Action Plan.

**Table IV.G-4. Consistency with Climate Action Plan Measures for New Development**

<b>Climate Action Plan Measure Project Conformance with Measure</b>	<b>Climate Action Plan Measure Project Conformance with Measure</b>
Consistency with key General Plan goals, policies, and actions that address sustainability, smart growth principles, multi-modal circulation improvements, and quality community design;	As detailed in Section IV.J (Land Use) of the Draft EIR, the proposed project would be consistent with all applicable goals, policies, and actions that address sustainability, smart growth principles, multi-modal circulation improvements, and quality community design.
Compliance with California's Title 24 Building Energy Efficiency Standards for Residential and Non- Residential Buildings;	The proposed project will be designed to meet Title 24 building energy efficiency standards for residential and non-residential buildings.
Compliance with the City's tree preservation ordinance;	The project includes no tree removal.
Incorporation of street trees and landscaping consistent with the City's Municipal Code;	The new streets will include street trees and landscaping consistent with the City's Municipal Code.
Consistency with the City's Design Guidelines Manual;	Future commercial and multi-family residential uses within the project will be designed to be consistent with the City's Design Guidelines Manual.
Consistency with the State's Water Efficient Landscape Ordinance (AB 1881);	Landscape installations for the project will be consistent with the requirements of the State's Water Efficient Landscape Ordinance.
Compliance with the City's Residential Energy Conservation Ordinance, which requires energy and water efficiency upgrades at the point-of-sale, prior to transfer of ownership (e.g., attic insulation, programmable thermostats, water heater insulation, hot water pipe insulation, etc.);	Future development will be required to be consistent with the City's Residential Energy Conservation Ordinance
Provision of bicycle facilities and infrastructure as may be required by the City's Bicycle Master Plan;	The proposed project has been designed to be consistent with the City's Bicycle Master Plan.
Installation of bicycle and vehicle parking consistent with the City's Municipal Code;	Future development within the project site will include bicycle and vehicle parking consistent with the City's Municipal Code.
Coordination with the Butte County Association of Governments to provide high quality transit service and infrastructure, where appropriate;	<i>Mitigation Measure TRANSPORTATION-5</i> requires the developer to coordinate subdivision improvement plans with the local transit provider to include bus stops in conformance with Butte Regional Transit design standards.
Consistency with the Butte County Air Quality Management District's CEQA Handbook;	Impacts AIR-1 through AIR-4 have been provided in this DEIR, consist with the BCAQMD's CEQA Handbook guidance.
Adherence to Butte County Air Quality Management District mitigation requirements for construction sites (e.g., dust suppression measures, reducing idling equipment, maintenance of equipment per manufacturer specs, etc.);	Construction of the proposed project would adhere to all applicable rules and requirements, including BCAQMD's dust suppression measures, reductions in idling and equipment maintenance requirements.
Requirement for new employers of 100+ employees to submit a Transportation Demand Management Plan;	No large single employer with more than 100 employees is anticipated within the proposed project.
Diversion of fifty percent (50%) of construction waste;	The proposed project would meet all green building requirements as required by California Green

	Building Code requirements starting in 2018.
Compliance with the City's Capital Improvement Plan, which identifies new multi-modal facilities and connections;	The proposed project has been designed to be consistent with the City's Capital Improvement Plan, and most notably with the City's Bruce Road Widening Project.
Option to incorporate solar arrays in parking areas in lieu of tree shading requirements;	Future development of parking areas shall be consistent with municipal code requirements for shading, which can be achieved with trees or solar arrays.
Consistency with the City's Storm Drainage Master Plan.	The proposed storm drain system has been designed to be consistent with the City's Storm Drainage Master Plan and will be verified as such at each development phase when detailed improvement plans are submitted during project build-out.
Source: City of Chico, 2012; WRA 2018.	

As detailed in Table IV.G-3, the proposed project is generally consistent with the Climate Action Plan's new development measures. However, as discussed above project GHG emissions would exceed the significance threshold of 1,100 metric tons threshold and 4.6 MT of CO<sub>2</sub>e per service population. Therefore, this impact would be considered **significant and unavoidable**.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of *Mitigation Measure AIR-2C/GHG-1* would reduce the GHG operational impacts, but not a level a level of less than significant. Therefore, this impact would remain **significant and unavoidable**.

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## **IV. ENVIRONMENTAL IMPACT ANALYSIS**

### **H. HAZARDS AND HAZARDOUS MATERIALS**

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#### **INTRODUCTION**

This section of the DEIR evaluates potential hazards and hazardous materials that may result from implementation of the Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone (“proposed project”). Hazardous materials that could be introduced as a result of project implementation, as well as possible health hazards associated with the proposed project, are assessed in this section.

#### **ENVIRONMENTAL SETTING**

The following section summarizes identified hazards and potentially hazardous materials existing or considered likely to occur on the project site, and which could therefore impact the proposed project. This includes a consideration of risk from exposure to hazards or hazardous materials during earthwork and grading, construction, and during the course of normal operations at the proposed Stonegate Subdivision.

As discussed in Section III (Project Description) of this DEIR, the project site is located along the east and west side of Bruce Road, between E. 20<sup>th</sup> Street and the Skyway at Assessor Parcel Numbers (“APNs”) 002-190-041, 018-510-007, 008, and 009. The project site is generally level open space, gently sloping up to the northeast and was historically used for grazing land, although that use has been much less active in during the past 25 years. Surrounding land uses include a mix of single-family and multi-family residential uses, commercial uses, grazing land, and public open space. A detailed discussion of the site topography is provided in Section IV.F (Geology and Soils).

#### **Hazardous Materials**

According to 22 California Code of Regulations (“CCR”) § 66261.20, the term “hazardous substance” refers to both hazardous materials and hazardous wastes, both of which are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity. A hazardous material is defined by 22 CCR § 66261.10 as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness or may pose a substantial presence or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (22 CCR § 66261.10).

### **Hazardous Sites (Cortese List)**

The provisions of Government Code 65962.5 require the Department of Toxic Substance Control ("DTSC"), the State Water Resources Control Board, the California Department of Health Services, and the California Integrated Waste Management Board to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to the Secretary of Cal/EPA. Based on a review of regulatory databases,<sup>1</sup> including listed hazardous materials release sites compiled pursuant to Government Code 65962.5, the project site is not listed as a hazardous materials site. The nearest active cleanup site is located at Bruce and Humboldt Roads, Highway 32, approximately 0.88 miles north of the project site. This site was previously a burn dump and landfill that is now an active cleanup site under the State's jurisdiction.

### **Emergency Response/Evacuation**

The City of Chico and Butte County have both adopted Emergency Response Plans<sup>2</sup>, which include prearranged emergency response procedures and mutual aid agreements for emergency assistance with the City. Emergency routes for evacuation of Chico are Highway 99 and State Route 32.

### **Wildfire Hazards**

The California Department of Forestry and Fire Protection ("CAL FIRE") has mapped areas in Butte County with significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Very High Fire Hazard Severity Zones, are classified by the CAL FIRE Director in accordance with Government Code Sections 51175-51189 to assist responsible local agencies identify measures to reduce the potential for losses of life, property, and resources from wildland fire. According to CAL FIRE, the project site is not located within a Fire Hazard Severity Zone, but the site is located adjacent to a Moderately High Fire Hazard Severity Zone ("MHFHSZ").<sup>3</sup>

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<sup>1</sup> State Water Resources Control Board, 2011. GeoTracker Environmental Database. <http://www.envirostor.dtsc.ca.gov/public/>. Accessed May 2016..

<sup>2</sup> City of Chico Resolution No. 72-14 adopting the Butte County Local Hazard Mitigation Plan <https://www.buttecounty.net/oem/MitigationPlans.aspx>

<sup>3</sup> CAL FIRE. 2007. Available at: [http://www.fire.ca.gov/fire\\_prevention/fhsz\\_maps\\_butte](http://www.fire.ca.gov/fire_prevention/fhsz_maps_butte). Accessed May 2016.

## REGULATORY SETTING

A variety of laws and regulations at the federal, state, and local levels affect the management and control of hazardous substances. These regulations are intended to protect both the environment and public health from improper use, handling, storage, transport, and disposal of hazardous materials. The following section describes the regulatory framework for hazardous materials, worker health and safety requirements and potentially hazardous materials associated with the proposed construction.

### Federal and State Regulations

#### *California Environmental Protection Agency*

In California, the U.S. Environmental Protection Agency (“EPA”) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (“Cal EPA”). In California, regional agencies are responsible for programs regulating emissions to the air, as well as discharges to soil, surface water, and groundwater.

#### Hazardous Materials

At the project site, the Butte County Air Quality Management District (“BCAQMD”) has oversight over air emissions and the Central Valley Regional Water Quality Control Board (“Central Valley Water Board”) regulates discharges and releases to surface and groundwater. Oversight for investigation and remediation of sites affected by hazardous materials releases can be performed by state agencies, such as the DTSC or the Regional Water Board. The Resource Conservation and Recovery Act (“RCRA”) is the United States’ primary law governing the handling and disposal of solid hazardous waste. RCRA, which was passed into law in 1976, set out to accomplish the following main goals: ensure that wastes are managed in an environmentally sound manner, protect human health and the environment from the potential hazards of waste disposal, reduce the amount of waste generated, and conserve energy and natural resources.

#### *Hazardous Materials Transportation*

Transportation of hazardous materials on highways is regulated through the Federal Department of Transportation (“DOT”) and the California Department of Transportation (“Caltrans”). Transportation by rail is regulated through the DOT Office of Railroad Safety, Hazardous Materials Division. Hazardous materials transportation safety programs include a system of placards, labels, and shipping papers required to identify the hazards of shipping each class of hazardous materials. Federal and state laws include regulations outlined in the Hazardous Materials Transportation Act administered by DOT. Caltrans is mandated to implement the regulations established by DOT, which are published as the Federal Code of Regulations, title 49, commonly referred to as 49 CFR. Regulations of hazardous materials and wastes include the manufacture of packaging and transport containers; packing and repacking;

labeling, marking or placarding; handling; spill reporting; routing of transports; training of transport personnel; and registration of highly hazardous material transport.

#### *Hazardous Materials Storage, Handling, and Disposal*

Routine hazardous materials management in California is administered under the Certified Uniform Program Agency (“CUPA”) program. The CUPA program was established under California Senate Bill 1082 to reduce the cost and improve the efficiency of hazardous materials regulations. In Butte County, the CUPA is the Butte County Public Health Department (“BCPHD”). The CUPA program encompasses several hazardous materials programs: Hazardous Materials Management Plans (“HMMP”) program, California Accidental Release Prevention (“CalARP”) program, underground storage tank (“UST”) programs, aboveground storage tank (“AST”) programs, and hazardous waste generation and disposal. The six hazardous materials programs administered under the CUPA program are described briefly below.

#### Hazardous Materials Management Plan

Businesses that store hazardous materials in excess of specified quantities must report their chemical inventories by preparing a HMMP, also known as a Business Plan. This information informs the community on chemical use, storage, handling, and disposal practices. It is also intended to provide essential information to firefighters, health officials, planners, elected officials, employees, and their representatives so that they can plan for and respond to potential exposures to hazardous materials.

#### California Accidental Release Prevention Program

Under CalARP, businesses that use large quantities of acutely hazardous materials must prepare a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential.

#### Underground Storage Tank Programs

Due to fire hazards, flammable liquids, such as gasoline, have historically been stored in USTs, which, over time, tend to leak, resulting in potential risks for the general public and the environment. Current regulations require that USTs be installed, monitored, operated, and maintained in a manner that protects public health and the environment. Tanks must be constructed with primary and secondary levels of containment and be designed to protect public health and the environment for the lifetime of the installation.

#### Aboveground Storage Tank Programs

Inspections and permits are required for facilities storing hazardous materials in ASTs. In addition, any facility operating ASTs with an aggregate tank capacity of 1,320 gallons or more must: (1) complete a Spill Prevention Control and Countermeasure (“SPCC”) plan to provide a detailed engineering analysis of the potential for release from ASTs present at a facility and the measures, such as secondary containment and emergency response that can be implemented

to reduce the release potential; and (2) file a storage statement, as required by the State Water Resources Control Board ("SWRCB").

#### Hazardous Waste Generation and Disposal

Once a hazardous material has been used or processed, what remains may be considered a hazardous waste. Many items routinely used by residents and businesses, such as paints and thinners, cleaning products, and motor oil, are considered hazardous waste once they are ready for disposal. Businesses that generate more than 100 kilograms of hazardous waste per month, or more than one kilogram of acutely hazardous waste, must be registered with U.S. EPA's RCRA program and are subject to extensive regulations regarding storage and disposal. When CUPAs perform inspections for HMMP, they also verify that businesses are properly registered under RCRA and are properly handling and disposing hazardous wastes.

#### *Worker Health and Safety Regulations*

Worker health and safety in California is regulated by the California Department of Industrial Relations, Division of Occupational Safety and Health ("California OSHA"). California OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices. Several programs related to worker health and safety are described below.

#### Injury and Illness Prevention Plan

The California General Industry Safety Order<sup>4</sup> requires that all employers in California shall prepare and implement an Injury and Illness Prevention Plan, which should contain a code of safe practice for each job category, methods for informing workers of hazards, and procedures for correcting identified hazards.

#### Emergency Action Plan

The California General Industry Safety Order<sup>5</sup> requires that all employers in California prepare and implement an Emergency Action Plan. The Emergency Action Plan designates employee responsibilities, evacuation procedures and routes, alarm systems, and training procedures.

#### Fire Prevention Plan

The California General Industry Safety Order<sup>6</sup> requires that all employers in California prepare and implement a Fire Prevention Plan. The Fire Prevention Plan specifies areas of potential hazard, persons responsible for maintenance of fire prevention equipment or systems, fire prevention housekeeping procedures, and fire hazard training procedures.

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<sup>4</sup> California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3203.

<sup>5</sup> California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3220.

<sup>6</sup> California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3221.

### Fire Protection Regulations

The 2010 California Building Code (“CBC”) applies to all occupancies throughout the State of California; however, cities and/or counties may establish more restrictive building standards reasonably necessary because of local climatic, geological, or topographic conditions. Furthermore, local fire jurisdictions may identify additional fire hazard areas, especially in communities adjacent to wildlands. Development of new buildings located within an area designated by the enforcing agency to be at significant risk from wildfires, for which an application for a building permit and/or plan approval for construction is submitted, shall meet the intent of CBC Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure.

Regulations require that building products and construction methods comply with applicable codes and ordinances of the local authority having jurisdiction with compliance submitted to the building official having jurisdiction for final approval.

### **Local Regulations**

#### *City of Chico*

#### City of Chico 2030 General Plan

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-2.1 (Potential Flood Hazards) – When considering areas for development, analyze and consider potential impacts of flooding.

Policy S-3.1 (Potential Structural Damage) – Prevent damage to new structures caused by seismic, geologic, or soil conditions.

Policy S-4.1 (Fire Safety Staffing) – Maintain adequate fire suppression and prevention staffing levels.

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.

Policy S-4.4 (Vegetation Management) – Support vegetation management and weed abatement programs that reduce fire hazards.

Policy S-5.5 (Crime Detering Design) – Support the deterrence of crime through site planning and community design.

Policy S-8.1 (Hazardous Materials Safety Coordination) – Support efforts to reduce the potential for accidental release of toxic and hazardous substances.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on the Appendix G, Environmental Checklist Form, of the State *CEQA Guidelines*, the project would have a significant impact on the environment related to hazards and hazardous materials if it would:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- b) 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.
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- d) 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.
- e) 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 for people residing or working in the project area.
- f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

### Hazards and Hazardous Materials Criteria Not Discussed Further in the Draft EIR

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of this Draft EIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- 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 for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

## **Project Impacts and Mitigation Measures**

### *Impact HAZ-1: Emergency Response and Evacuation*

The General Plan identifies Highway 99 and SR32 as emergency routes for evacuation within the City. The project site is approximately 1.15 miles east of Highway 99 and 1.15 miles south of SR32. Access to Highway 99 would be provided through the proposed roadways that lead to either E.20<sup>th</sup> Street or Skyway. Access to SR32 would be provided through the proposed roadways that lead to Bruce Road. While the construction workers and vendors would use these routes to access the project site, this would not create a level of traffic that would impede emergency access to or from the site during construction activities. During construction, appropriate coordination with the Chico Fire Department and Police Department would be required to ensure emergency vehicle access is maintained through construction areas. As described in Section IV.O (Transportation and Traffic), the proposed circulation for the project would adhere to the emergency access requirements of the City of Chico for the number of access lanes on each road and approved turn-arounds with appropriate turning radii, thus reducing operational impacts of the project.

While Section IV.L (Population and Housing) of this DEIR utilizes BCAG regional growth projections to analyze impacts of the proposed project on population, the Emergency Management Plan Adopted by the City of Chico utilizes the General Plan's population growth projections to prepare adequate emergency management strategies and evacuation routes. Full buildout of the proposed project is fully covered under the buildout scenario of the General Plan, which utilizes a higher growth rate than the BCAG projections. Finally, the proposed project does not propose any off-site modifications to roadways in a manner that would impair or interfere with emergency response or evacuation (permanent road closures, lane narrowing, one-way street conversions, etc.). Impacts would be less than significant.



*Impact HAZ-2: Wildland Fire Exposure*

As discussed above, the proposed project is not within a Fire Hazard Severity Zone, but the site is located adjacent to a Moderately High Fire Hazard Severity Zone ("MHFHSZ"). The City of Chico General Plan includes several policies related to fire safety, including Policy S-4.3 (Fire Safety Standards and Programs), which states, "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." As all the development and building applications to be developed as a result of this subdivision would undergo review for compliance with City and State fire codes, this policy reduces the risk for new development on the vacant parcels to be at risk from fire threats. As discussed in Impact HAZ-1 above, the proposed project would also comply with emergency access requirements and would provide access to emergency evacuation routes, which would further minimize wildlife impacts on the proposed project.

**LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Hazards and hazardous materials impacts associated with the proposed project would be ***less than significant***.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### I. HYDROLOGY AND WATER QUALITY

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## INTRODUCTION

This chapter describes the environmental setting for the proposed project, including a description of the watershed and groundwater basin, surface runoff and drainage, flooding, and water quality, based on available information provided as part of the project application and published reports. The environmental setting also describes the project regulatory framework. Following the setting, impacts that could result from implementation of the proposed project are evaluated.

## ENVIRONMENTAL SETTING

This subsection describes the existing hydrological setting at and near the proposed project. For the purposes of this analysis, the study area for hydrology and water quality includes the project site and the adjacent areas within the groundwater basin and watershed.

### Stormwater Runoff and Drainage

The project site is located within the Butte Creek Watershed, which receives approximately 20 to 50 inches of rain annually.<sup>1</sup> The project site is generally undeveloped grassland and, therefore, most rainfall on the project site infiltrates to the subsurface, unless rainfall rates exceed the infiltration capacity of the soils. Streams on the project site follow the general topography that gradually slopes down to the southwest from an elevation of about 270 feet to 225 feet (NAVD 88).<sup>2</sup> However, a 5- to 12-foot tall levee constructed for the Butte Creek Diversion Channel traverses from north to south across the middle of the project site and creates a divide in the site drainage (Figure 1). The levee for the Butte Creek Diversion Channel was built in 1957 to limit and divert excess floods flows from Little Chico Creek, located north of the project site, to Butte Creek, located south of the project site.<sup>3</sup>

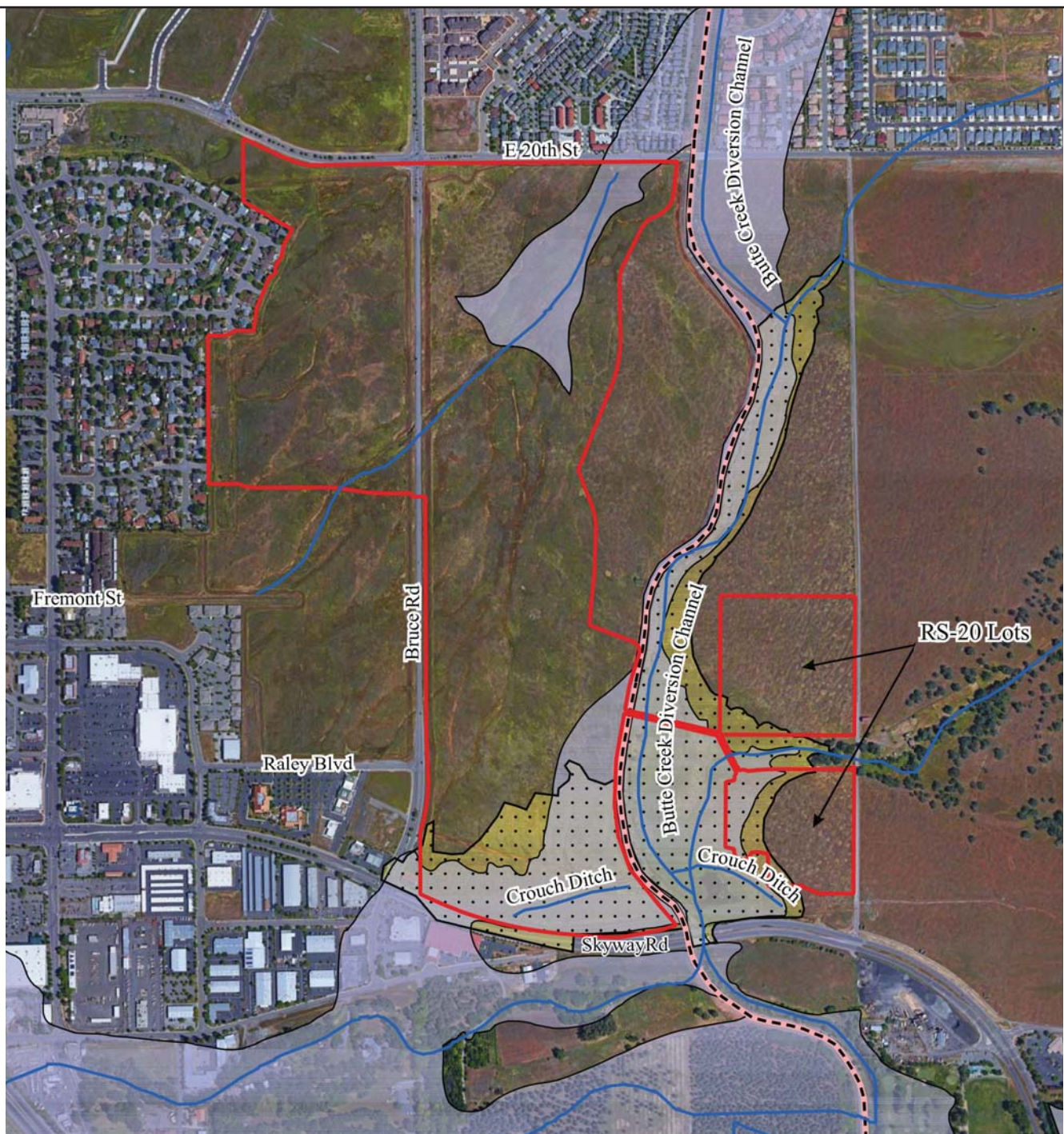
The Butte Creek Diversion Channel collects surface water from several intermittent streams that enter the east side of the project site from the Sierra Foothills and flows south-southeast for about 1.0 mile before connecting to Butte Creek. One of the intermittent streams is a remnant of the Crouch Ditch along the southern boundary of the project site, which was historically used as

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<sup>1</sup> *Sacramento River Watershed Program, 2010. The Sacramento River Basin; A Roadmap to Watershed Management. Butte Creek Watershed, Pages 125-130. October.*

<sup>2</sup> *USGS, 2015. Chico Quadrangle, California-Butte Ca., 7.5-Minute Series,*

<sup>3</sup> *California Department of Water Resources, 2014. Mid and Upper Sacramento Regional Flood Management Plan. November 10.*



#### Legend

- Project Footprint
- - - Federal Levee Centerline
- Stream or Channel
- FEMA 100-Year Flood Zone
- DWR 200-Year Flood Zone

Sources: Federal Levee Centerline (DWR, 2017); Streams and Channels (USGS National Hydrography Dataset); FEMA 100-Year Flood Zones (FEMA, 2011); DWR 200-year Flood Zones (DWR, 2013).

Note: The extent of the 200-year flood zones only shown in the immediate project vicinity. The extent of the Crouch Ditch and an unnamed stream on the northwest side of the project site was reduced based on field observations from September 26, 2017. Evidence of a braided network of streams was observed on the west and northwest side of project site (not marked on figure, but visible from aerial photograph).

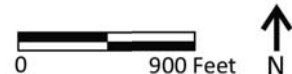


Figure IV.I-1 Hydologic Features

Stonegate Vesting Tenative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Baseline

an irrigation canal for agriculture. Some water from the Crouch Ditch drains into the Butte Creek Diversion Channel, and the remainder appears to pool onsite (Figure 1).

There are vernal pools and a series of braided streams on the west and northwest side of the project site that intermittently flow to the southwest through several culverts under Bruce Road and into a surface ditch located on the neighboring Chico Unified School District property that drains southwest into a City culvert near Fremont Street (Figure 1). From there, the City's existing storm drain system conveys water to Comanche Creek located about 1.0 mile southwest of the project site. Butte Creek flows into the Sacramento River about 45 miles south-southeast of the project site.

### **Surface Water Quality**

As discussed above, stormwater runoff from the project site either drains into the Butte Creek Diversion Channel or into the City storm drain system at Fremont Street. According to the Central Valley Regional Water Quality Control Board's (Regional Water Board's) Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins, the beneficial uses of Butte Creek include municipal and domestic supply, irrigation, stock watering, power, water contact, warm and cold freshwater habitat, cold migration, warm and cold spawning, and wildlife habitat.

Pursuant to Section 303(d) of the Clean Water Act, the State Water Resources Control Board (State Water Board) has listed Butte Creek as an impaired water body for mercury and pH. Impaired water bodies refer to those that do not meet one or more of the water quality standards established by the state. Total Maximum Daily Loads (TMDLs) will be established for Butte Creek in 2021 to describe the maximum amount of a pollutant that the water bodies can receive while still meeting water quality standards. Once a TMDL is developed, it will be implemented by allocating wasteloads via the National Pollutant Discharge Elimination System (NPDES) permit program. The regulatory framework for designating impaired water bodies, establishing TMDLs, and NPDES permits is discussed under the Regulatory Framework section below.

### **Groundwater Quality**

The West Butte subbasin of the Sacramento Valley Groundwater Basin underlies the project site and is listed in the Basin Plan as having the potential to support the beneficial uses of municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply. Based on groundwater level measurements collected near the project site, groundwater is approximately 40 feet below ground surface in the project vicinity.<sup>4</sup> As discussed in Section IV.H (Hazards and Hazardous Materials) there is no documented groundwater contamination beneath the project site.

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<sup>4</sup> Broadbent & Associates, Inc., 2017. *First Quarter 2017 Groundwater Monitoring Report; Flyers Energy (former Nella Oil Company) Station No. 50, 2501 Notre Dame Boulevard, Chico, Butte County, California. April.*



## Storm-related Flooding

The water levels in the Butte Creek Diversion Channel rise rapidly during a storm event and generally flow high for a limited duration. However, a prolonged storm event could potentially exceed the capacity of the levee structure and channel.<sup>5</sup> Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, portions of the project site along the Butte Creek Diversion Channel are mapped within a 100-year flood zone. Portions of the project site along the Crouch Ditch and unnamed streams on the northwest and southeast side of the project site are also mapped within a 100-year flood zone (Figure 1).<sup>6</sup>

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, portions of the project site along the Butte Creek Diversion Channel and Crouch Ditch are mapped within a 200-year flood zone (Figure 1).<sup>7</sup>

## Dams Inundation

Dams that could inundate significant portions of watersheds in the Chico area include the Shasta Dam, Oroville Dam, Whiskeytown Dam, and Black Butte Dam. The project site is not located within the potential inundation area for any of these dams.<sup>8</sup>

## Mudflow

Prolonged and intense rainfall on steep hillslopes can cause mud flows (also known as debris flows). These catastrophic flows are capable of destroying homes, washing out roads and bridges, sweeping away cars, knocking down trees, and obstructing streams and roadways with thick deposits of mud and rocks. Since there are no steep hills located in the project vicinity, the project site would not be at risk of inundation from mudflows.

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<sup>5</sup> California Department of Water Resources, 2014. *Mid and Upper Sacramento Regional Flood Management Plan*. November 10.

<sup>6</sup> Federal Emergency Management Agency (FEMA), 2011. *Flood Insurance Rate Map, Butte County, California and Incorporated Areas, 06007C0506E and 06007C0510E*. Revised January 6.

<sup>7</sup> California Department of Water Resources (DWR), 2013. *FloodSAFE California; Senate Bill 1278/Assembly Bill 1965 Urban Level of Flood Protection Informational Map with Water Surface Elevation Contours. Sacramento River Basin Chico Study Area Chico USGS Quadrangle*. Page 6. June 24.

<sup>8</sup> City of Chico, 2011. *Chico 2030 General Plan, Safety*. April.

**Seiches**

A seiche is the oscillation of a body of water at its natural period. Seiches occur most frequently in enclosed or semi-enclosed basins such as lakes, bays, or harbors and may be triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunami, or tides. The project site is not located near any large bodies of water. Therefore, the project would not be at risk of flooding from seiches.

**Sea Level Rise and Tsunamis**

The project site is located far inland from any coastline. Therefore, the project would not be at risk of flooding from sea level rise or tsunamis.

## REGULATORY SETTING

### Federal Regulations

#### *Clean Water Act of 1972*

The federal Clean Water Act (CWA) amendments establish the basic structure for the U.S. Environmental Protection Agency (USEPA) to regulate discharges of pollutants into the waters of the United States. Under the CWA, the USEPA sets water quality standards for contaminants in surface waters and implements the pollutant control programs, as discussed below.

#### *Impaired Waters and TMDL Program*

In accordance with Section 303(d) of the CWA, states must evaluate all available water quality-related data and information to present the USEPA with a list of water bodies that do not meet established water quality standards (i.e., impaired waters). States must then develop a TMDL for every pollutant on the impaired waters list. An essential component of a TMDL is the calculation of the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. Based on the TMDL, the state allocates a loading capacity among the various point and non-point sources that discharge into the impaired waterbody. Permits for point sources are issued through the USEPA's NPDES program, as discussed below.

#### *NPDES Permit Program*

Under Section 402 of the CWA, the discharge of pollutants through a point source into waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program is conducted through the State Water Board and the nine Regional Water Quality Control Boards. The Regional Water Quality Control Boards set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs. The proposed project would be subject to NPDES permits as described under the State regulatory framework, below.

#### *Federal Flood Insurance Program*

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the NFIP and creates Flood Insurance Rate Maps that designate 100-year floodplain zones and delineate other flood hazard areas. A FEMA 100-year flood hazard zone is an area that has a 1-in-100 (1 percent) chance of being flooded in any year based on historical data.



## State Regulations

### *Porter-Cologne Water Quality Control Act*

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides for the protection of the quality of all waters of the State of California for use and enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by interbasin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control is therefore administered on a local level with statewide oversight. Within this framework, the act authorizes the State Water Board and the nine Regional Water Quality Control Boards to oversee the coordination and control of water quality within California. The Porter-Cologne Act also provides for the development and tri-annual review of Water Quality Control Plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters.

### *NPDES Construction General Permit*

Construction in California that disturbs one or more acres of land surface are required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). The Construction General Permit is issued by the State Water Board and is overseen by the Regional Water Board in the proposed project area.

To obtain coverage under the Construction General Permit, the discharger must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required in Attachment B of the Construction General Permit. The construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The permit also covers linear underground and overhead projects such as pipeline installations.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the established risk level (Risk Level 1, 2, or 3) of the project. The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (e.g., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The discharger would determine the project risk level when filing the Notice of Intent.

A Qualified SWPPP Developer must prepare a SWPPP that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to (1) help identify the sources of sediment and other pollutants that could affect the quality of stormwater

discharges; and (2) describe and ensure the implementation of Best Management Practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Common BMPs on construction sites include project phasing and the placement of vegetation, straw, fiber, stabilizing emulsion, protective blankets, or other materials on areas of disturbed soils to reduce erosion. A Qualified SWPPP Practitioner must oversee the operation of BMPs that meet the requirements outlined in the permit.

The SWPPP also requires a construction site monitoring program. The monitoring program may include, depending on the project's risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

The Construction General Permit allows non-stormwater discharge of dewatering effluent if the water is not contaminated and is properly filtered or treated, using appropriate technologies such as clarifier tanks and/or sand filters. If the dewatering activity is deemed by the local Regional Water Board to not be covered by the Construction General Permit, then the discharger would be required to prepare a Report of Waste Discharge, and if approved by the local Regional Water Board, be issued site-specific waste discharge requirements (WDRs) under NPDES regulations. Site-specific WDRs contain rigorous monitoring requirements and performance standards that, when implemented, ensure that receiving water quality is not substantially degraded. The discharge of dewatering effluent is authorized under the Construction General Permit if the following conditions are met:

- The discharge does not cause or contribute to a violation of any water quality standard;
- The discharge does not violate any other provision of the Construction General Permit;
- The discharge is not prohibited by the applicable Basin Plan;
- The discharger has included and implemented specific BMPs required by the Construction General Permit to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment;
- The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
- The discharge is monitored and meets the applicable numeric action levels; and
- The discharger reports the sampling information in the annual report.

If any of the above conditions are not satisfied, the discharge of dewatering effluent is not authorized by the Construction General Permit. The discharger must notify the local Regional Water Board of any anticipated non-stormwater discharges not already authorized by the Construction General Permit or another NPDES permit, to determine whether a separate NPDES permit is necessary.

### *NPDES Small MS4 General Permit*

Municipal stormwater discharges in the City of Chico are regulated under the statewide NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Order No. 2013-0001-DWQ (Small MS4 General Permit). Under the Small MS4 General Permit, projects that create or replace 5,000 square feet or more of impervious surface are required to incorporate standard permanent and/or operation source control measures as applicable and Low Impact Development (LID) standards. LID design standards apply techniques to infiltrate, filter, store, evaporate, and/or detain stormwater runoff close to its source to maintain pre-development runoff rates and volumes. Common practices used to adhere to the LID principles include, but are not limited to, the use of permeable pavement and bioretention areas. Furthermore, projects in the Great Valley geomorphic province (such as the proposed project) that create and/or replace one acre or more of impervious surface are 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.

### **Local Regulations**

#### *Basin Plan*

The Regional Water Board implements the Basin Plan,<sup>9</sup> which is a master policy document for managing water quality issues in the Central Valley region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. The Regional Water Board also evaluates the water quality within water bodies to determine if they are impacted by pollutants such that it would impair its use. Impaired waters are rivers, lakes, or streams that do not meet one or more water quality standards and are considered too polluted for the intended beneficial uses. Specific narrative and numerical water quality objectives (e.g., color and concentration limits, respectively) have been developed in the Basin Plan to protect beneficial use designations through the adoption of WDRs, cleanup abatement orders, and TMDLs.

#### *Central Valley Flood Protection Plan*

The Central Valley Flood Protection Act of 2008 directed the DWR to prepare the Central Valley Flood Protection Plan and submit to the Central Valley Flood Protection Board (CVFPB) for adoption. The Central Valley Flood Protection Act of 2008 establishes that urban areas require protection from flooding that has a 1-in-200 chance of occurring in any given year (200-year flood). The DWR's most recent update to the Central Valley Flood Protection Plan, which was adopted by the CVFPB in August 2017, includes Urban Level of Flood Protection Criteria to help cities determine if proposed land-use development would provide an adequate urban level of

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<sup>9</sup> Central Valley Regional Water Quality Control Board, 2016. *Op. cit.*

flood protection.<sup>10</sup> Land-use developments that meet all of the following Urban Level of Flood Protection Criteria<sup>11</sup> may be subject to urban level of flood protection requirements:

- Located within an urban area that is a developed area with 10,000 residents or more, or an area outside a developed area that is planned or anticipated to have 10,000 residents or more within the next 10 years;
- Located within a flood hazard zone that is mapped as either a special hazard area or an area of moderate hazard on FEMA's official Flood Insurance Rate Map for the NFIP;
- Located within the Sacramento-San Joaquin Valley;
- Located within an area with a potential flood depth above 3.0 feet, from sources of flooding other than localized conditions;
- Located within a watershed with a contributing area of more than 10 square miles.

#### *Central Valley Flood Protection Board Encroachment Permits*

The CVFPB regulates the alteration and construction of levees and floodways in the Central Valley that are defined as part of the Sacramento Valley and San Joaquin Valley flood-control projects. The purpose and mission of the CVFPB, with authority granted under the California Water Code and Title 23 of the California Code of Regulations, is threefold:

- Control flooding along the Sacramento and San Joaquin rivers and their tributaries in cooperation with the U.S. Army Corp of Engineers;
- Cooperate with various agencies of the federal, state, and local governments in establishing, planning, constructing, operating, and maintaining flood-control works; and
- Maintain the integrity of the existing flood-control system and designated floodways through the board's regulatory authority by issuing permits for encroachments.

CVFPB requires an encroachment permit application to be filed for any work conducted in designated floodway, on a state or federally owned levee, and/or near a regulated stream (e.g., Butte Creek Diversion Channel). The CVFPB exercises jurisdiction over the waterward area between project levees, a minimum 10-foot-wide strip adjacent to the landward levee toe, and within 30 feet of the top of the banks of un-leveed project channels. Activities outside of these limits which could adversely affect the flood control project are also under the CVFPB's jurisdiction. Encroachment activities may include, but are not limited to, the placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, fill, embankment, building, or structure.

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<sup>10</sup> California Department of Water Resources, 2017. *Central Valley Flood Protection Plan; 2017 Update*. August.

<sup>11</sup> California Department of Water Resources, 2013. *Urban Level of Flood Protection Criteria*. November

The CVFPB may approve structures constructed within an adopted plan of flood control, such as the Central Valley Flood Protection Plan, if they conform to the following standards from Title 23 of the California Code of Regulations:

- Structures may not be constructed on a levee section or within ten feet of a levee toe;
- Structures must be securely anchored and flood proofed to at least two feet above the 100-year flood elevation or two feet above the design flood plain, whichever is higher;
- Flood proofing must be consistent with the potential uses of the structure;
- Structures must be located and oriented to have minimal impact on flood flows; and
- The number of structures permitted is limited to the minimum reasonably necessary to accomplish an appropriate land use activity.

#### *City of Chico Municipal Code*

Chico Municipal Code Chapter 15.50 governs stormwater management and discharge controls. The chapter 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.

Chico Municipal Code Chapter 16R.37 describes the City's floodplain management standards, which apply to all development occurring within a FEMA 100-year flood hazard zone. The floodplain management standards require future developments to be properly anchored, elevated, and constructed to resist or minimize flood damage. The City also prohibits obstructions which would cause or contribute to an increase in flood heights and velocities.

#### *City of Chico General Plan*

The following goals and policies are relevant to hydrology and water quality:

**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.

## **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.

**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.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Criteria for determining the significance of impacts to hydrology and water quality have been developed based on Appendix G of the CEQA Guidelines and relevant agency thresholds. Based on the Appendix G, Environmental Checklist Form, of the State *CEQA Guidelines*, the proposed project would have a significant impact on the environment related to hydrology and water quality if it would:

- a. Violate any water quality standards or waste discharge requirements;
- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- e. 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;
- f. Otherwise substantially degrade water quality;
- g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- j. Expose people or structures to inundation by seiche, tsunami or mudflow.



## Hydrology and Water Quality Issues not Further Analyzed

The following issue was addressed in the Initial Study (see Appendix A) and was determined to result in no impact or a less-than-significant impact and do not warrant further analysis:

- Inundation by seiche, tsunami or mudflow – The project site is located inland, far from any coastline and the surrounding terrain is relatively flat. Therefore, there would be no impacts associated with inundation by seiche, tsunami or mudflow.

### *Impact HYDRO-1: Violation of any water quality standards or waste discharge requirements*

During construction of the project, exposed soils and any chemicals spilled or leaked onto the ground may be entrained in stormwater runoff into the Butte Creek Diversion Channel or an unnamed stream located on the project site. During operation of the project, urban pollutants such as landscaping chemicals and spilled or leaked maintenance chemicals can also be entrained in stormwater runoff. Project construction activities would involve site preparation, grading, and excavation of soil, which could result in temporary erosion and movement of sediments into nearby surface waterways, particularly during precipitation events. 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 waterways in stormwater runoff, wash water, and dust control water. The release of sediments and other pollutants during construction could adversely affect water quality in receiving waters.

During construction, the proposed project would be required to comply with the Construction General Permit, because construction activities would disturb more than one acre of land. In accordance with the General Construction Permit, the project would be required to prepare and implement a SWPPP that includes BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.

During operation, the proposed project would be required to comply with the Small MS4 General Permit, because the proposed project would create more than 5,000 square feet of impervious surface. In accordance with the Small MS4 General Permit, the project would be required to implement post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces.

Because compliance with the Construction General Permit and the Small MS4 General Permit is mandatory, impacts related to the violation of any water quality standards or waste discharge requirements would be less-than-significant.

*Impact HYDRO-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge*

Water supply services for the proposed project would be provided by the California Water Service's (Cal Water's) Chico-Hamilton District. Groundwater is expected to be the sole source of supply for the Chico-Hamilton District through 2040. Using available historical information and projections of future water uses, regulatory and legal constraints, and hydrological and environmental conditions, including climate change, Cal Water has performed a Water Supply Assessment to evaluate the reliability of the Chico-Hamilton District's water supply. Based on the assessment, Cal Water has concluded that for the next 20 years the Chico-Hamilton District will be able to provide adequate water supplies to meet existing and projected customer demands, which includes full development of the proposed project for normal, single dry year, and multiple dry year conditions.<sup>12</sup> In addition, because the project would create 5,000 square feet or more of impervious surface, it is subject to the post-construction stormwater management requirements under the NDPES Small MS4 General Permit, such as LID design standards that encourage infiltration of rainwater to maintain the site's pre-development stormwater runoff rates and volumes. Therefore, the project would have a less-than-significant impact related to the depletion of groundwater supplies and interference with groundwater recharge.

*Impact HYDRO-3: Substantial Erosion or Siltation through Alteration of Drainage Patterns*

Development of subdivisions on APNs 021-190-041, 018-510-009, and 018-510-008 would remove the braided network of intermittent streams observed on the west and northwest side of the project site. Stormwater runoff would be piped through these subdivisions and discharged to existing storm drains along Fremont Street, Bruce Road, and Skyway Road. The City's existing storm drain system conveys runoff to Comanche Creek, about 1.0 mile southwest of the project site.

Stormwater runoff from development of the proposed RS-20 lots on APN 018-510-007 would be piped through the associated streets and discharged to the Butte Creek Diversion Channel. As a result, project operations could potentially increase the rate, volume, and/or duration of stormwater discharges into the Butte Creek Diversion Channel, which could contribute to stream channel hydromodification downstream of the project site in Butte Creek. However, the proposed project would be required to comply with the Construction General Permit and Small MS4 General Permit. The Construction General Permit requires preparation and implementation of a SWPPP, including BMPs to reduce and eliminate sediment during construction activities. The Small MS4 General Permit requires implementation of post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces. Compliance with the Construction General Permit and Small MS4 General

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<sup>12</sup> California Water Service (Cal Water), 2017. Draft SB 610 Water Supply Assessment For Stonegate Vesting Tentative Subdivision Map and General Plan Amendment. September 15.

Permit would ensure that the rate, volume, and/or duration of stormwater discharges from the project would not substantially increase during construction and operations.

Portions of the project site along the Butte Creek Diversion Channel, Crouch Ditch, and unnamed streams on the northwest and southeast sides of the project site are mapped within the FEMA 100-year flood zone and/or DWR 200-year flood zone (Figure 1). As discussed under Impact HYDRO-4, development of the proposed RS-20 lots would substantially change the existing topography and place fill and structures within the existing FEMA 100-year and DWR 200-year flood zones. As a result, this could affect channel flow during a 100-year or 200-year flood event and cause a substantial increase in erosion and downstream siltation. As discussed under Impact HYDRO-4, development of the other lots for the proposed project are not expected to substantially alter the velocity of flood flows. Implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2* would reduce potentially significant impacts related to erosion and siltation from altered drainage patterns to a less-than-significant level.

*Mitigation Measure HYDRO-1:*

Prior to development of the RS-20 lots, the project applicant shall prepare a detailed hydraulic evaluation to determine the potential for improvements within the existing Federal Emergency Management Agency (FEMA) 100-year flood zones and California Department of Water Resources (DWR) 200-year flood zones to result in changes to the extent, depth, and velocity of flood flows. The modeling shall be performed and certified by a professional engineer using the U.S. Army Corp of Engineer's Hydrologic Engineering Center's River Analysis System (HEC-RAS) or similar surface water flow modeling software. The modeling shall include an evaluation of both the on-site and off-site flooding impacts under existing flooding conditions and future flood conditions as a result of developing the RS-20 lots.

Based on the surface water flow modeling, areas of development that could reduce the overflow storage capacity of floodwater near the channel shall be identified. For any of the RS-20 lots improvements that could reduce overflow storage capacity, the project design shall be modified to ensure there is no net decrease in the floodwater storage capacity. This could include balancing the amount of cut and fill materials within the flood zones.

Based on the surface water flow modeling, areas of development that could affect the velocity of floodwater along the Butte Creek Diversion Channel shall be identified. For any improvements that would substantially alter the channel flow velocity, the project design for the RS-20 lots shall be modified to reduce potential erosion, siltation, and associated flooding impacts. Modifications to the project design may include, but are not limited to, the following measures.

- Alter the location and design of structures and/or fill materials within the FEMA 100-year flood zones or DWR 200-year flood zones.
- Install erosion controls systems such as rock protection or erosion resistant vegetation.
- Increase the size of proposed culverts.
- Install cross-flow culverts for improvements through flood zones.

- Improve existing off-site stormwater drainage systems that would receive runoff from the project site.

The detailed hydraulic evaluation and, if necessary, proposed changes to the RS-20 lots design, shall be submitted to the City of Chico and any other regulatory agencies that have jurisdiction over the improvements.

*Mitigation Measure HYDRO-2:*

The project applicant shall coordinate levee modification activities (if any) with the California Department of Water Resources and obtain an encroachment permit from the Central Valley Flood Protection Board (CVFPB) prior to commencing project construction activities. As required by the encroachment permit, project construction shall comply with the CVFPB's flood control standards described under Title 23 of the California Code of Regulations and (if applicable) the U.S. Army Corps of Engineers construction standards to ensure that the integrity of the existing flood-control system is properly maintained.

*Impact HYDRO-4: Increased Flooding through Alteration of Drainage Patterns or Substantial Increases in the Rate or Amount of Surface Runoff*

As discussed above, compliance with the Construction General Permit and Small MS4 General Permit would ensure that the rate, volume, and/or duration of stormwater discharges during project construction and operation activities would be similar to existing conditions. However, the proposed project would encroach on the Butte Creek Diversion Channel and levee and place fill material and structures within the FEMA 100-year flood zones and DWR 200-year flood zones. The potential effect of project developments on the extent, depth, and velocity of flood flows relative to existing conditions is discussed below.

The Butte Creek Diversion Channel and levee on the project site are under the CVFPB's jurisdiction and provide flood protection for the City of Chico. According to the DWR's Central Valley Flood Protection Plan, future developments on the project site may be subject to the Urban Level of Flood Protection Criteria. Based on a detailed cross-sectional analysis of existing flooding zones on the project site,<sup>13</sup> none of the proposed structures would exceed the Urban Level of Criterion of being placed more than 3 feet below the DWR's 200-year base flood elevation. As a result, the proposed project would not adversely affect the urban level of flood protection provided by the existing flood control system.

Existing FEMA mapping shows flooding occurring on the northwest portion of the project site due to overflow from the Butte Creek Diversion Channel north of East 20<sup>th</sup> Street (Figure 1). However, the overflow area to the north was recently developed for residential purposes, and the terrain was elevated at least 1 foot above the FEMA 100-year base flood elevation. Therefore, the pathway for flooding on the northwest portion of the project site no longer exists and development within this area would have no effect on existing flood conditions.

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<sup>13</sup> Rolls Anderson & Rolls Civil Engineers, 2018. *Stonegate Floodplain Cross-Sections*. February 27.

Existing FEMA 100-year and DWR 200-year flood mapping shows flooding occurring on the southwest portion of the project site, to the west of the levee. Based on a detailed cross-sectional analysis of existing flood zones on the project site, the terrain west of the levee is at a higher elevation than the terrain east of the levee, and generally slopes away from the channel.<sup>14</sup> As a result, any development within the flood zones to the west of the levee could potentially affect the overflow storage capacity of floodwater, but would not be expected to affect the velocity of floodwater along the Butte Creek Diversion Channel. The project design includes a balance of cut and fill materials within the flood zones to ensure that there is no net decrease in the floodwater storage capacity; therefore, development west of the levee would not result in an increase in flooding.

Existing FEMA 100-year and DWR 200-year flood mapping shows flooding occurring on the southeast portion of the project site, to the east of the levee. Based on a detailed cross-sectional analysis of existing flood zones on the project site, the terrain east of the levee is at a lower elevation than the terrain west of the levee, and could potentially influence the velocity of flow along the channel.<sup>15</sup> Therefore, any development within the flood zones to the east of the levee could potentially affect both the overflow storage capacity of floodwater and the velocity of floodwater along the Butte Creek Diversion Channel. While the project design includes a balance of cut and fill materials within the flood zones to ensure that there is no net decrease in the floodwater storage capacity, changes to the drainage patterns east of the levee could affect the channel flow velocity and increase flooding conditions.

As a result, development of the RS-20 lots could result in a potentially significant impact related to on- or off-site flooding. Implementation of *Mitigation Measures HYDRO-1* and *HYRDO-2* would reduce potentially significant impacts related to flooding on- and off-site site from altered drainage patterns to a less-than-significant level.

*Impact HYDRO-5: Create or Contribute Runoff Water that Exceeds the Capacity of the Existing or Planned Stormwater Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff*

Stormwater runoff from subdivisions on APNs 021-190-041, 018-510-009, and 018-510-008 would be discharged to the existing storm drains along Fremont Street, Bruce Road, and Skyway Road. As discussed above, compliance with the Construction General Permit and Small MS4 General Permit would ensure that the rate, volume, and/or duration of stormwater discharges during project construction and operation activities would be similar to existing conditions. Therefore, the proposed project would have a less-than-significant impact related to an exceedance of the City of Chico's existing stormwater drainage system.

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<sup>14</sup> *Ibid* 13

<sup>15</sup> *Ibid* 13.

*Impact HYDRO-6: Substantial Degradation of Water Quality*

As discussed above, compliance with the Construction General Permit and the Small MS4 General Permit would prevent substantial degradation of water quality. Therefore, impacts associated with substantial degradation of water quality would be less-than-significant.

*Impact HYDRO-7: Placing Housing within a 100-year Hazard Area as Mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or Other Flood Hazard Delineation Map*

As discussed under Impact HYDRO-4, portions of the project site are located within the FEMA 100-year and DWR 200-year flood zones (Figure 1). According to the project design, all housing would be placed at least 1 foot above the FEMA 100-year base flood elevation and no more than 3 feet below the DWR 200-year base flood elevation. Furthermore, the City of Chico's floodplain management standards set forth in Chapter 16R.37 of the Municipal Code require that housing within a mapped FEMA 100-year flood zone be properly anchored, elevated, and constructed to minimize flood damage. As a result, impacts associated with placing housing within a FEMA 100-year flood zone or DWR 200-year flood zone would be less-than-significant.

*Impact HYDRO-7: Placing Structures within a 100-year Flood Hazard Area which would Impede or Redirect Flood Flows*

As discussed under Impact HYDRO-4, portions of the project site are located within the FEMA 100 year flood zones (Figure 1). Based on the terrain, the placement of structures west of the levee would not be expected to impede or redirect the flow of channel floodwater. However, the placement of structures east of the levee associated with the RS-20 lots could potentially influence channel flow and cause a redirection and/or impediment of flood flows. Implementation of *Mitigation Measures HYDRO-1* and *HYRDO-2* would reduce potentially significant impacts related to the impediment or redirection of flood flows from the placement of structures in the FEMA 100-year flood zones to a less-than-significant level.

*Impact HYDRO-8: Inundation as a Result of the Failure of a Levee or Dam*

The project site is not located within a dam inundation area. However, the levee along the Butte Creek Diversion Channel provides flood protection for the City of Chico. Project improvements that encroach upon the levee (e.g., stormwater discharge pipelines) could potentially weaken the structural integrity of the levee. Failure of the levee due to proposed project improvements could result in a potentially significant impact related to flooding. Implementation of *Mitigation Measures HYDRO-1* and *HYRDO-2* would reduce potentially significant impacts related to flooding from levee failure to a less-than-significant level.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

All project impacts related to hydrology and water quality are ***less-than-significant*** after implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2*.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### J. LAND USE AND PLANNING

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#### INTRODUCTION

This section addresses potential land use issues related to construction and operation of the proposed project, including an assessment of project conformance with local and regional land use plans, policies and regulations.

#### REGULATORY SETTING

##### Federal and State Regulations

No federal plans, policies, regulations, or laws pertaining to topics addressed under CEQA pertaining to land use planning (division of established communities, policy consistency, and conflict with conservation plans) are applicable to the proposed project.

Various federal programs and regulations would indirectly relate to land use, such as the federal and California Endangered Species Acts, U.S. Army Corps of Engineers' enforced wetlands regulations, and other regulations. See Section IV.D of this EIR, "Biological Resources," which provides detailed information on existing federal biological regulations and ongoing habitat conservation planning efforts.

Local land use plans and regional plans and policies, rather than federal or state policies, govern density and other limitations on the physical nature of projects within the jurisdiction of a City or County. Therefore, this section describes the local policies and guidelines associated with land use and planning as defined by the City, County and the regional agencies.

##### Regional Regulations

###### *Butte County Air Quality Management District*

The proposed project is located in Butte County and is within the Northern Sacramento Valley Air Basin ("NSVAB"). The NSVAB is partially monitored by the Butte County Air Quality Management District ("BCAQMD"). The *2014 CEQA Air Quality Handbook* provides a technical guide to assess the air quality impact of land use projects under CEQA. The purpose of the guidelines is to provide guidance for applicant and lead agencies to comply with the requirements of CEQA when evaluating potential air quality and greenhouse gas impacts that may occur with a proposed project. Included is information and approaches necessary to modelling and determining the significance of impacts, and mitigation of impacts that are significant. The District is responsible for attainment of the National and California Air Quality Standards in Butte County. Although the District has no statutory authority over land-use, nearly all discretionary projects in Butte County, from general plans to individual development

applications, have the potential to result in pollutants that will worsen air quality and make it more difficult for the District to achieve national and State air quality standards.

### **Local Regulations**

California State law (Government Code, Section 65300) requires that each city and county, including charter cities, prepare and adopt a comprehensive, long-term general plan for its future development. This general plan must contain seven elements, including: (1) land use; (2) circulation; (3) housing; (4) conservation; (5) open space; (6) noise; and (7) safety. Of these elements, state law mandates that the land use element must correlate with the circulation element. In addition to these, state law permits cities and counties to include optional elements in their general plans, thereby providing local governments with the flexibility to address the specific needs and unique character of their jurisdictions. California law also requires that the day-to-day decisions of a city or county follow logically from and be consistent with the general plan. More specifically, Government Code Sections 65860 and 66473.5 require that zoning ordinances and subdivision and parcel map approvals be consistent with the general plan. Goals, objectives and programs established for each element of the general plan must meet the existing and future needs and desires of the community. These goals, objectives and programs are specific, action-oriented and promoted during the life of the general plan. Relevant plans and policies from the City of Chico 2030 General Plan and the Chico Area Recreation and Park District Parks and Recreation Master Plan are provided below.

#### *City of Chico*

##### 2030 General Plan

The 2030 City of Chico General Plan provides the necessary information and analysis to allow decision makers and the public to identify consensus goals for the future. The General Plan also identifies the policies and actions that are necessary to achieve these goals between the present and 2030, while also fulfilling legal requirements in California for comprehensive planning. The combined narrative and diagrammatic information in the General Plan represents the City's overarching policy direction for physical development and conservation. The General Plan puts decision-makers, City staff, property owners, property developers and builders, and the general public on notice regarding the City's approach to managing land use change.

The existing and proposed General Plan land use designations for the proposed project are provided in Section III (Project Description) Table III-2. The following definitions describe the current and future General Plan and zoning designations:



## General Plan Land Use Designations

- **VLDR (Very Low Density Residential).** From 0.2 to 2.0 dwelling units per gross acre. 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.
- **LDR (Low Density Residential).** From 2.1 to 7.0 dwelling units per gross acre. This designation represents the traditional single-family neighborhood with a majority of single-family detached home and some duplexes. This is the predominant land use category of the City’s existing neighborhoods.
- **MDR (Medium Density Residential).** From 6.0 to 14.0 dwelling units per gross acre. 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.
- **CMU (Commercial Mixed Use).** From 6.0 to 22.0 dwelling units per gross acre. This designation encourages the integration of retail and service commercial use with office and/or residential uses. In mixed-use project, 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.
- **OMU (Office Mixed Use).** From 6.0 to 20.0 dwelling units per gross acre. This designation is characterized by predominantly office uses, but allows the integration of commercial and/or residential uses. Other primary uses may be allowed by right or with approval of a Use Permit, as outlined in the Municipal Code.
- **POS (Primary Open Space).** 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.
- **SOS (Secondary Open Space).** This designation includes land use 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.
- **Resource Constraints Overlay (RCO).** This is an overlay designation that identifies areas with significant environmental resources that result in development constraints. The RCO requires subsequent studies to determine to exact location and the intensity of development that can take place in light of identified constraints.

## Zoning Districts

A zoning district may implement and be consistent with more than one General Plan land use designation. The primary General Plan land use designation associated with each zoning district is provided below.

- **RS (Suburban Residential).** Very Low Density Residential at 0.2 to 2.0 units per gross acre.
- **R1 (Low Density Residential).** Low Density Residential at 2.1 to 7.0 units per gross acre or small lot subdivision.
- **R2 (Medium Density Residential).** Medium Density Residential (MDR) at 6 to 14.0 units per gross acre.
- **CC (Community Commercial).** Commercial Mixed Use at 6.0 to 22.0 units per gross acre. If residential uses are incorporated horizontally, the minimum density shall be met, but if integrated vertically, there is no minimum density requirement. When located Downtown or within a Corridor Opportunity Site, Commercial Mixed Use and Office Mixed Use have a maximum density of 60 dwelling units per gross acre.
- **OS1 (Primary Open Space).** Primary Open Space.
- **OS2 (Secondary Open Space).** Secondary Open Space.
- **-RC (Resource Constraint).** Resource Constraint Overlay.

### *Chico Area Recreation and Park District (CARD)*

#### Parks and Recreation Master Plan

Goal 1. Provide a wide range of recreation and leisure opportunities for all residents of the Chico Area Recreation and Park District.

Provide 1.5 acres of neighborhood parklands and 2.5 acres of community parklands for every 1,000 residents.

Provide accessible features and rehabilitate existing facilities to meet the requirements of the Americans with Disabilities Act ("ADA").

Goal 2. Equitably distribute and conveniently locate parks and recreation facilities and trails throughout CARD, the City of Chico, and Butte County within the Chico Urban Area.

When possible, locate neighborhood parks within one-half mile of the neighbors they are intended to serve, and in locations that are comfortably and safely accessible by pedestrians and bicyclists.

Locate parks conveniently accessible to neighborhoods and in areas with good pedestrian or trail access.

Goal 4. Develop and maintain parks and recreation facilities in an environmentally sensitive manner.

Where possible, avoid environmentally sensitive areas when locating developed facilities.

Protect water quality through implementation of “Best Management Practices” in the design of storm water conveyance and detention facilities.

Goal 5. Provide adequate land acquisition, development, operations, and maintenance funding sources and tools to realize the Master Plan vision.

Ensure that new residential development provides the needed funding for parks and recreation facilities to the extent allowed by state law.

Maintenance Impact Statements will be completed for all new recreation areas and facilities and funds will be provided to maintain these facilities.

## ENVIRONMENTAL IMPACTS

### Methodology

CEQA Guidelines state that an EIR shall discuss any inconsistencies between the proposed project and applicable general plans, specific plans and regional plans (see CEQA Guidelines Section 15125 (d)). Inconsistency with a land use policy is not, in and of itself, an environmental impact and does not require a finding of significance. Instead, a planning inconsistency is a factor that should be considered in determining the significance of changes in the physical environment caused by the proposed project.

The impacts of the proposed project were analyzed qualitatively, focusing on consistency between proposed and permitted uses under applicable land use plans and zoning regulations. The determination of consistency is based on consideration of the provisions of the applicable plans, the anticipated environmental effects of proposed uses and the sensitivity of adjacent uses to those effects.

This Draft EIR provides a detailed analysis of policies of the City of Chico 2030 General Plan and analyses of other applicable plans (listed below) and policies so that the decision-makers may determine project consistency. Policies that are applicable to the proposed project are identified in Chapters IV.B through III.P of this Draft EIR.

### Thresholds of Significance

Criteria outlined in Appendix G, Environmental Checklist Form, of the *CEQA Guidelines* indicate that a project may have a significant effect on the environment related to land use if it were to:

- (a) Physically divide an established community;
- (b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- (c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

### Land Use and Planning Criteria Not Discussed Further in the Draft EIR

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of this Draft EIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Physically divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

## Impacts and Mitigation Measures

### *Impact LUP-1: Consistency with Applicable Land Use Plans, Policies and Regulations*

As discussed in Section III (Project Description), the project would require a General Plan Amendment and Rezone.

The proposed project is generally consistent with the General Plan as the designations for the site would still permit a variety of residential, commercial, and open space uses. Upon approval, the project would be consistent with the General Plan, as the General Plan itself would reflect the project. The proposed project includes preservation of approximately 108.8 acres of Open Space. Additionally, the project would also provide usable open space to local residents in the form of 0.7 acres of bicycle path and 3.3 acres of parkland. Therefore the project is consistent with the Chico Area Recreation and Park District Master Plan that recommends neighborhood parks be located within one-half mile of the residents they are intended to serve. Refer to Section IV.N (Recreation) for the project's impact on parkland.

An analysis of the project's consistency with relevant General Plan Land Use Element and Community Design Element policies is provided in Table IV.J-1 below. Potential policy conflicts are also described individually below.

### Title 19, Land Use and Development Regulations

The proposed project includes rezoning as discussed in Section III (Project Description). The rezoning would generally remove the –RC (Resource Constraint) and –PD (Planned Development) overlays from the site and apply the following zones to specific areas of the project: R1 (Low Density Residential), R2 (Medium Density Residential), RS-20 (Sub-urban Residential), CC (Community Commercial), OS1 (Primary Open Space) and OS2 (Primary Open Space). Commercial and multi-family residential zoning (CC and R2, respectively) would be located near major intersections, high-value biological resource areas along the Butte Creek Diversion Channel would be set aside with Primary Open Space (OS1) zoning, intervening areas would generally be zoned for low-density single-family housing (R1), sub-urban residential zoning (RS-20) would be located on the eastern edge of the site, and two centrally-located park sites would be zoned Secondary Open Space (OS2).

Since the re-zoning would establish separate zoning for biological preserve areas and development areas, it is appropriate to remove the –RC overlay. Also, as no specific development plans are proposed for the commercial and multi-family lots, and future development in these areas will be subject to the City's Site Design and Architectural Review process, the City will retain the ability to ensure appropriate architecture and compatible site designs on these lots in the future without retaining the –PD overlay within the project.

The following analysis assumes that the rezoning would be adopted, as proposed, and evaluates the project's consistency with the Land Use and Development Regulation. While policy inconsistencies are not significant environmental impacts, the project's consistency with the policies listed in Table IV.J-1 was taken into account as part of the analysis in this DEIR.

**Table IV.J-1  
City of Chico 2030 General Plan  
Policy Consistency Analysis**

<b>Policy</b>	<b>Comments</b>
<b>Sustainability Chapter 2</b>	
<b>Goal SUS-1: Balance the environment, economy and social equity, as defined in the General Plan, to create a sustainable Chico.</b>	
<b>Policy SUS-1.1</b> (General Plan Consistency)- Ensure proposed development projects, policies and programs are consistent with the General Plan.	The proposed project includes amendments to the General Plan. Upon approval, the project would be consistent with the General Plan, as the General Plan itself would reflect the project.
<b>Goal SUS-4: Promote green development.</b>	
<b>Policy SUS- 4.2</b> (Water Efficient Landscaping)- Promote drought tolerant landscaping.	The proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code.
<b>Policy SUS-4.3</b> (Green Development Practices)- Promote green development practices in private projects.	The proposed project would be subject to the discretionary review and approval by the City. As outlined in Section III (Project Description) the project has an objective to be consistent with City design policies and Design Guidelines Manual. Furthermore, the proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code. The proposed project would preserve a significant amount of open space and would maintain and protect the integrity of the Butte Creek Diversion Channel and riparian habitat.
<b>Goal SUS-5: Increase energy efficiency and reduce non-renewable energy resource consumption citywide.</b>	
<b>Policy SUS 5.2</b> (Energy Efficient Design)- Support the inclusion of energy efficient design and renewable energy technologies in public and private projects.	The proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code.
<b>Goal SUS-6: Reduce the level of Greenhouse Gas Emissions Citywide.</b>	
<b>Policy SUS-6.1</b> (Greenhouse Gas Reduction Efforts) – Support local, regional, and statewide efforts to reduce emissions of greenhouse gases linked to climate change.	The proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code. Further measure are discussed in Section IV.G (Greenhouse Gas Emissions).
<b>Policy SUS-6.3</b> (Greenhouse Gas Emissions and CEQA)-Analyze and mitigate potentially significant increases in greenhouse gas emissions during project review, pursuant to the California Environmental Quality Act.	IV.G. Greenhouse Gas Emissions of this DEIR analyzes and provides mitigation for GHG emissions. However, impacts would be Significant and Unavoidable after available mitigation measures.

Policy	Comments
Land Use Chapter 3	
<b>Goal LU-1 Reinforce the City's compact urban form, establish urban growth limits, and manage where and how growth and conservation will occur.</b>	
<b>Policy LU-1.2</b> (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.	The proposed project site is within the growth boundary identified in the General Plan. As it is within the City's Sphere of Influence it would still be consistent with these long-term boundaries.
<b>Policy LU-1.3</b> (Growth Plan)- Maintain balanced growth by encouraging infill development where City services are in place and allowing expansion into Special Planning Areas.	The proposed project would develop a site which is adjacent to existing neighborhoods. Furthermore, the site is adjacent to a planned school.
<b>Goal LU-2: Maintain a land use plan that provides a mix and distribution of uses that meet the identified needs of the community.</b>	
<b>Policy LU-2.1</b> (Planning for Future Housing and Jobs)- Maintain an adequate land supply to support projected housing and job needs for the community.	One of the proposed project's objectives is to provide a significant number of single family (424 lots) and multi-family residential units (13.4 acres) in order to help meet the City's need for housing.
<b>Policy LU-2.3</b> (Sustainable Land Use Pattern)- Ensure sustainable land use patterns in both developed areas of the City and new growth areas.	The proposed project is subject to discretionary review and approval by the Chico City Council, which will consider consistency of the project with the Community Design Element of the General Plan, guidelines of the City of Chico Design Guidelines Manual, as stated in Section III (Project Description). The project would also be built in phases as market conditions allow, in order to ensure the necessary residential and commercial development would keep pace with population growth.
<b>Policy LU 2.4</b> (Land Use Compatibility)- Promote Land Use Compatibility through use restrictions, development standards, environmental review and special design considerations.	The proposed project is subject to discretionary review and approval by the Chico City Council, which would consider the consistency of the project with the Community Design Element of the General Plan, guidelines of the City of Chico Design Guidelines Manual, as stated in Section III (Project Description). Furthermore, the project would require a zoning change and a General Plan Amendment prior to implementation.
<b>Policy LU-2.5</b> (Open Space and Resource Conservation)- Protect areas with known sensitive resources.	
<b>Policy LU -2.6</b> (Agricultural Buffers)- Require buffering for new urban uses along the City's Sphere of Influence boundary 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: <ul style="list-style-type: none"> <li>A minimum 100-foot-wide physical separation, which may include roadways,</li> </ul>	The proposed project is not adjacent to agricultural uses where a buffer is needed.

Policy	Comments
<p>pedestrian/bicycle routes, and creeks, between the agricultural use and any habitable structure.</p> <ul style="list-style-type: none"> <li>Incorporate vegetation, as may be needed, to provide a visual, noise and air quality buffer.</li> </ul>	
<p><b>Policy LU-2.7</b> (General Plan Consistency Requirement)- Ensure consistency between the General Plan and implementing plans, ordinances, and regulations.</p>	<p>The proposed project would be subject to a General Plan Amendment and zoning change prior to implementation in order to be consistent with the General Plan. The project would be required to comply will all applicable implementing plans, ordinances, and regulations.</p>
<p><b>Policy LU 2.8</b>(Inconsistent Zoning)- In areas where zoning is not in conformance with the General Plan, the property owner may develop consistent with the existing zoning if no discretionary permit is required. If a discretionary permit is requested, the property owner may either (1) develop consistent with the existing zoning provided that it is determined by the approving body that the project will not substantially interfere with the long-term development of the area consistent with the General Plan, or (2) rezone the property consistent with the General Plan in conjunction with the development application.</p>	<p>The proposed re-zoning of the project site matches the proposed General Plan land use designations.</p>
<p><b>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.</b></p>	
<p><b>Policy LU-3.1</b> (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.</p>	<p>The proposed project would create a new subdivision of single and multi-family units, open space and commercial uses. The project would connect to an existing adjacent neighborhood. As further described in Section III (Project Description), the project includes public parks, public open space, bicycle paths to reduce auto trips and support walking, biking, and transit use. In addition, the commercial development would be within walking distance of the vast majority of the proposed residential units.</p>
<p><b>Policy LU-3.2</b> (Neighborhood Serving Centers)- Promote the development of strategically located neighborhood serving centers that incorporate commercial employment, cultural or entertainment uses and are within walking distance of surrounding residents. Neighborhood center designations are Neighborhood Commercial (NC) and Mixed Use Center Core (MUNC).</p>	<p>The proposed project would not include any NC or MUNC designated uses, however the proposed project would include 36.6 acres of commercial uses, that could potentially serve as a center for commercial employment, cultural or entertainment uses that would be within walking distance for the proposed single or multi-family residential uses.</p>
<p><b>Policy LU 3.4</b> (Neighborhood Enhancement)- Strengthen the character of existing residential neighborhoods and districts.</p>	<p>The proposed project would serve as an addition to the existing neighborhoods adjacent the project site to the west and north. The project would provide an additional public park, open space, and commercial uses for existing residents.</p>



Policy	Comments
<b>Circulation Chapter 4</b>	
<b>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.</b>	
<b>Policy CIRC-1.1</b> (Transportation Improvements)- Safely and efficiently accommodate traffic generated by development and redevelopment associated with build-out of the General Plan Land Use Diagram.	See Section IV.O (Transportation and Traffic), for further discussion. The project' would be required to follow all applicable sections of the City's municipal code.
<b>Policy CIRC-1.2</b> (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.	The proposed project would be subject to the discretionary review and approval of the Chico City Council. The proposed project would be required to pay for applicable roadway circulation improvements mitigation fees per Municipal Code Section 3.85.
<b>Policy CIRC-1.3</b> (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.	The proposed project would be subject to the discretionary review and approval of the Chico City Council. The proposed project would pay all applicable fair share fees the City requires for transportation impacts.
<p><b>Policy CIRC-1.4</b>(Level of Service Standards)- Until a Multimodal Level of Service (MMLOS) methodology is adopted by the City, maintain LOS D or better for roadways and intersections at the Peak PM period, except as specified below:</p> <ul style="list-style-type: none"> <li>LOS E is acceptable for City streets and intersections under the following circumstances: <ul style="list-style-type: none"> <li>Downtown streets within the boundaries identified in Figure DT-1 of the Downtown Element.</li> <li>Arterials served by scheduled transit.</li> <li>Arterials not served by scheduled transit, if bicycle and pedestrian facilities are provided within or adjacent to the roadway.</li> </ul> </li> <li>Utilize Caltrans LOS standards for Caltrans' facilities.</li> <li>There are no LOS standards for private roads.</li> </ul> <p>Exceptions to the LOS standards above may be considered by the City Council where reducing the level of service would result in a clear public benefit. Such circumstances include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>If improvements necessary to achieve the LOS standard results in impacts to a unique historical resource, a highly sensitive environmental area, requires in feasible right-of-way acquisition, or</li> </ul>	The proposed project would incorporate measures to ensure the LOS of intersections affected by the project either remain within acceptable levels, or are partially funded for improvement via payment of fair share contribution payments collected in conjunction with issuance of building permits. See Section IV.O (Transportation and Traffic), for further discussion.

Policy	Comments
<p>some other unusual physical constraint exists.</p> <ul style="list-style-type: none"> <li>If the intersection is located within a corridor that utilizes coordinated signal timing, in which case, the operation of the corridor as a whole should be considered.</li> </ul>	
<p><b>Policy CIRC-1.5</b> (Multimodal Level of Service Program)- Support implementation of a Multimodal Level of Service (MMLOS) assessment methodology.</p>	<p>The City has not adopted a MMLOS assessment methodology. See Section IV.O (Transportation and Traffic), for further discussion.</p>
<p><b>Policy CIRC 1.6</b> (Multimodal LOS Standards)- After adoption of MMLOS standards, maintain adequate MMLOS at intersections and along roadway segments as defined in the City's Transportation Impact Analysis Guidelines called for in Action CIRC-1.5.1.</p>	<p>The City has not adopted a MMLOS assessment methodology. See Section IV.O (Transportation and Traffic), for further discussion.</p>
<p><b>Goal CIRC-2: Enhance and maintain mobility with a complete streets network for all modes of travel.</b></p>	
<p><b>Policy CIRC-2.1</b> (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.</p>	<p>The proposed project would incorporate a multimodal circulation system through the implementation of a bike path, sidewalks, and public transit integration throughout the project site, consistent with adopted City planning documents.</p>
<p><b>Policy CIRC-2.2</b>(Circulation Connectivity and Efficiency)- Provide greater street connectivity and efficiency for all transportation modes.</p>	<p>The proposed project would add road infrastructure to allow for easy access to the proposed project, as well as connect to the existing roadways. Further detail regarding the number of new roads and the connection to existing roads can be found in Section III (Project Description) and Section IV.O (Transportation and Traffic).</p>
<p><b>Goal CIRC-3: Expand and maintain a comprehensive, safe, and integrated bicycle system throughout the City that encourages bicycling.</b></p>	
<p><b>Policy CIRC-3.1</b>(Bikeway Master Plan)- Implement an update the Chico Urban Area Bicycle Plan (CUABP) consistent with the goals and policies of the General Plan.</p>	<p>The proposed project would accommodate Class II Bike Lanes on Bruce Road, consistent with the CUABP.</p>
<p><b>Policy CIRC-3.3</b>(New Development and Bikeway Connections)-Ensure that new residential and non-residential development projects provide connection to the nearest bikeways.</p>	<p>The proposed project would accommodate Class II Bike Lanes on Bruce Road, consistent with the CUABP. The new uses would be connected via several streets as described in Section III (Project Description) and Section IV.O (Transportation and Traffic).</p>
<p><b>Policy CIRC-3.4</b> (Bicycle Safety)-Improve safety conditions, efficiency, and comfort for bicyclists through traffic engineering, maintenance and law enforcement.</p>	<p>The proposed project would be subject to discretionary review and approval by the City of Chico. Final roadway designs will be subject to review by the the City of Chico Public Works Department to ensure they meet applicable standards for bicycle safety.</p>

Policy	Comments
<b>Goal CIRC-4: Design a safe, convenient, and integrated pedestrian system that promotes walking.</b>	
<b>Policy CIRC-4.2</b> (Continuous Network)- Provide a pedestrian network in existing and new neighborhoods that facilitates convenient and continuous pedestrian travel free from major impediments and obstacles.	As described in Section III (Project Description) and Section IV.O (Transportation and Traffic) the entire internal circulation of the project site would provide sidewalks for pedestrians.
<b>Policy CIRC-4.3</b> (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.	As described in Section III (Project Description) the project includes detached sidewalks, bulb-outs, on-street parking, enhanced pedestrian crossings, and medians.
<b>Goal CIRC-5: Support a comprehensive and integrated transit system as an essential component of a multimodal circulation system.</b>	
<b>Policy CIRC-5.3</b> (Transit Connectivity in Projects)- Ensure that new development supports public transit.	The proposed project would provide access to public transit as applicable. It would not alter existing public transit routes along Bruce Road and E 20 <sup>th</sup> Street.
<b>Goal CIRC-8: Provide parking that supports the Citywide goals for economic development, livable neighborhoods, sustainability, and public safety.</b>	
<b>Policy CIRC-8.1</b> (Appropriate Parking)- Ensure that parking is provided in appropriate locations and amounts.	The project would provide public and private parking throughout the development. On-street parking would be developed along with street improvements and private driveways associated with residential uses would accommodate parking for the residents.
<b>Policy CIRC-8.2</b> (Parking Improvements)- Ensure that new parking facilities and renovations are designed to be safe, efficient, and pedestrian-friendly.	The project would offer public street parking as well as private parking for those who reside in the residential units on-site. The streets would feature a gutter system in addition to 5-foot sidewalks to ensure pedestrians have a safe means of travel throughout the project site.
<b>Goal CIRC-9: Reduce the use of single-occupant motor vehicles.</b>	
<b>Policy CIRC-9.1</b> (Reduce Peak- Hour Trips)- Strive to reduce single occupant vehicle trips through the use of travel demand management strategies.	The proposed project would encourage multimodal transportation through the inclusion of pedestrian and bicycle paths that connect to existing infrastructure.
<b>Policy CIRC-9.3</b> (Emphasize Trip Reduction)- Emphasize automotive trip reduction in the design, review, and approval of public and private development.	By including complete streets that encourage multimodal transportation the project would provide travel alternatives that support automotive trip reduction.

Policy	Comments
<b>Community Design Chapter 5</b>	
<b>Goal CD-1: Strengthen Chico's image and sense of place by reinforcing the desired form and character of the community.</b>	
<b>Policy CD-1.1</b> (Natural Features and Cultural Resources)- Reinforce the City's positive and distinctive image by reorganizing and enhancing the natural features of the City and protecting cultural and historic resources.	The proposed project would incorporate all necessary measures to protect the cultural and historic resources that are located on-site. However, the project would require mitigation in order to ensure no resources would be compromised. Section IV. E (Cultural Resources) highlights the specific resources that would have the potential to be impacted by the proposed project.
<b>Policy CD-1.2</b> (Reinforce Attributes)- Strengthen the positive qualities of the City's neighborhoods, corridors, and centers.	The proposed project would tie into an established neighborhood using streets and block patterns that are similar to and compatible with the existing development.
<b>Goal CD-2: Enhance edges and corridors that represent physical boundaries, transitions and connection throughout the community.</b>	
<b>Policy CD-2.1</b> (Walkable Grid and Creek Access)- Reinforce a walkable grid and street layout and provide linkages to creeks and other open spaces.	The project would create additional road infrastructure, as well as preserving a portion of the site as open space, as mentioned in Section III (Project Description). The project includes a new bike path that runs adjacent to the proposed open space preserve.
<b>Goal CD-3: Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.</b>	
<b>Policy CD-3.1</b> (Lasting Design and Materials)- Promote architectural design that exhibits timeless character and is constructed with high quality materials.	Final design plans for the commercial and multi-family residential lots are subject to future discretionary review and approval by the City's Architectural Review and Historic Preservation Board. All design concerns necessitating conditions from the Board to achieve consistency with this policy would be incorporated into the final design of the proposed project.
<b>Policy CD-3.2</b> (Bicycles and Pedestrians)- Maintain and enhance the pedestrian- and bicycle-friendly environment of Chico.	The project would include a bike paths as well as sidewalks, meant to improve access for pedestrian and bicycle traffic.
<b>Policy CD-3.4</b> (Public Safety)- Include public safety considerations in community design.	The proposed project has been designed to largely meet City subdivision standards, with specific exceptions requested on the map. The subdivision, along with its design exceptions will be subject to discretionary review and approval by the Chico City Council prior to implementation of the project. Planning staff will recommend conditions as necessary for the proposed project to be found consistent with General Plan policies.

Policy	Comments
<b>Goal CD-4: Maintain and enhance the character of Chico's diverse neighborhoods.</b>	
<b>Policy CD-4.1</b> (Distinctive Character)-Reinforce the distinctive character of neighborhoods with design elements reflected in the streetscape, landmarks, public art, and natural amenities.	The proposed project would include parks, public open space preserves, and streets that incorporate trees and other landscaping elements.
<b>Goal CD-5: Support infill and redevelopment compatible with the surrounding neighborhood.</b>	
<b>Policy CD-5.1</b> (Compatible Infill Development)-Ensure that new development and redevelopment reinforces the desirable elements of its neighborhood including the architectural scale style and setback patterns.	The proposed project layout represents compatible infill development by tying into an existing residential neighborhood along the western boundary, and responds to the site's context by planning backup lots along busy arterial streets.
<b>Policy CD-5.2</b> (Context Sensitive Transitions)-Encourage context sensitive transitions in architectural scale and character between new and existing residential development.	The proposed project layout creates context sensitive transitions by tying into an existing residential neighborhood along the western boundary, and responds to the site's context by planning backup lots along busy arterial streets.
<b>Goal CD-6: Enhance gateways and wayfinding elements for an improved sense of arrival and orientation for residents and visitors throughout Chico.</b>	
<b>Policy CD-6.2</b> (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 proposed project does not include gates at any part of the subdivision.
<b>Economic Development Chapter 7</b>	
<b>Goal ED-1: Maintain and implement an Economic Development Strategy to enhance Chico's long-term prosperity.</b>	
<b>Policy ED-1.2</b> (Physical Conditions)- Ensure an adequate supply of appropriately zoned land that is readily served by infrastructure to support local economic development for base level job growth and to maintain Chico's prominence as the regional center of retail activity for the tri-county region.	The proposed project would change the zoning of a site largely served by nearby infrastructure, thereby adding to the City's supply of developable land and forwarding economic development policy goals.
<b>Policy ED-1.5</b> (Quality of Life In Support of Economic Development)- Encourage projects and programs that help increase the quality of life for local businesses and their employees.	The proposed project would support a variety of uses (residential, commercial, and recreational) that combine to enhance quality of life for local businesses and employees.
<b>Parks, Greenways, Preserves and Recreational Open Space Chapter 9</b>	
<b>Goal PPFS-2: Utilize creeks, greenways and preserves as a framework for a system of open space.</b>	
<b>Policy PPFS-2.1</b> (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.	The project would include an open space preserve adjacent to Butte Creek as part of implementation of the project. This would protect habitat important for BCM. The project would also include a bike path that proves viewing points of the open space.

Policy	Comments
<b>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.</b>	
<b>Policy PPFS-4.1</b> (Sanitary Sewer System)- Improve and expand the sanitary sewer system as necessary to accommodate the needs of existing and future development.	The proposed project would be served by the City's municipal sewer system; it would be required to pay all applicable development fees to account for project impacts.
<b>Policy PPFS-4.2</b> (Protection of Groundwater Resources)- Protect the quality and quantity of groundwater resources, including those that serve existing private wells, from contamination by septic systems.	The proposed project would be served by the City's municipal sewer system; no septic systems would be used.
<b>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.</b>	
<b>Policy PPFS-5.3</b> (Water Conservation)- Work with Cal Water to implement water conservation management practices.	The project would implement all water conservation management practices established by Cal Water and the City. Furthermore, the proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code.
<b>Policy PPFS-5.4</b> (Large Water Users)- Encourage large water users such as Chico Unified School District, City of Chico, Chico Area Recreation and Park District, Enloe Medical Center, and large commercial and industrial users to implement water conservation practices.	The proposed project would be subject to the energy and water efficiency standards set forth in the California Green Building Standards Code and Chico Municipal Code.
<b>Goal PPFS-6: Provide a comprehensive and functional storm water management system that protects people, property, water quality, and natural aquifers.</b>	
<b>Policy PPFS-6.1</b> (Storm Drainage Master Plan)- Address current and future storm drainage needs in a Storm Drainage Master Plan.	The proposed project would be required to submit a Storm Drainage Master Plan as part of the entitlement process.
<b>Policy PPFS-6.2</b> (Storm Water Drainage)- Continue to implement a storm water drainage system that results in no net increase in runoff.	<p>During construction, the proposed project would be required to comply with the Construction General Permit, because construction activities would disturb more than one acre of land. In accordance with the General Construction Permit, the project would be required to prepare and implement a SWPPP that includes BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.</p> <p>During operation, the proposed project would be required to comply with the Small MS4 General Permit, because the proposed project would create more than 5,000 square feet of impervious surface. In accordance with the Small MS4 General Permit, the project would be required to implement post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces.</p>

Policy	Comments
<b>Policy PPFS-6.3</b> (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.	During operation, the proposed project would be required to comply with the Small MS4 General Permit, because the proposed project would create more than 5,000 square feet of impervious surface. In accordance with the Small MS4 General Permit, the project would be required to implement post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces.
<b>Policy PPFS-6.4</b> (Water Runoff)- Protect the quality and quantity of water runoff that enters surface waters and recharges the aquifer.	<p>During construction, the proposed project would be required to comply with the Construction General Permit, because construction activities would disturb more than one acre of land. In accordance with the General Construction Permit, the project would be required to prepare and implement a SWPPP that includes BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity.</p> <p>During operation, the proposed project would be required to comply with the Small MS4 General Permit, because the proposed project would create more than 5,000 square feet of impervious surface. In accordance with the Small MS4 General Permit, the project would be required to implement post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces.</p>
<b>Open Space and Environment Chapter 10</b>	
<b>Goal OS-1: Protect and conserve native species and habitats.</b>	
<b>Policy OS-1.1</b> (Native Habitats and Species)- Preserve native species and habitat through land use planning, cooperation, and collaboration.	The project includes approximately 108-acres of open space that would be preserved through implementation of the proposed project. Impacts to native species are discussed in Section IV.D (Biological Resources).
<b>Policy OS-1.2</b> (Regulatory Compliance)- Protect special- status plant and animal species, including their habitats, in compliance with all applicable state, federal and other laws and regulations.	All necessary permits would be acquired prior to implementation of the proposed project. All impacts related to special-status plant and animal species would be mitigated, and are described in further detail in Section IV.D (Biological Resources).
<b>Policy OS-1.3</b> (Light Pollution)- Reduce excessive nighttime light and glare.	Application of existing City development standards would ensure that no excessive illumination would occur from exterior lighting introduced by the project. Further detail is given in Section III (Project Description), noting that new lighting would be designed to minimize glare and reflection.

Policy	Comments
<b>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.</b>	
<b>Policy OS-2.1</b> (Planning and Managing Open Space)- Continue acquisition, management, and maintenance of open space to protect habitat and promote public access.	Over 108-acres of open-space would be preserved as a result of the proposed project.
<b>Policy OS-2.2</b> (Creek Corridors and Greenways)- Expand Creekside greenway areas for open space and additional pedestrian/ bicycle routes.	The project would preserve approximately 108-acres of open space adjacent to Butte Creek. A pedestrian/bicycle path would also be implemented to continue pedestrian and bicyclist accessibility adjacent to the creek.
<b>Policy OS-2.4</b> (Foothill Viewshed) – Preserve the foothills as a natural backdrop to the urban form.	Approximately 108-acres of open space would be preserved adjacent to Butte Creek. One of the objectives of the project is to maintain and protect the integrity of the Butte Creek Diversion Channel and riparian habitat
<b>Policy OS-2.5</b> (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.	Approximately 108-acres of open space would be preserved adjacent to Butte Creek. One of the objectives of the project is to maintain and protect the integrity of the Butte Creek Diversion Channel and riparian habitat
<b>Policy OS-2.6</b> (Oak Woodlands)- Protect oak woodlands as open space for sensitive species and habitat.	The project site includes 0.56 acre of mixed riparian woodland and 1.08 acre Riparian oak woodland. Approximately 108-acres of the project site would be preserved as open space, which includes these communities.
<b>Goal OS-3: Conserve water resources and improve water quality.</b>	
<b>Policy OS-3.1</b> (Surface Water Resources)- Protect and improve the quality of surface water.	The proposed project would implement construction and operational water pollution prevention measures to protect water quality. Refer to Section IV.I (Hydrology and Water Quality) for further discussion.
<b>Policy OS-3.2</b> (Protect Groundwater)- Protect groundwater and aquifer recharge areas to maintain groundwater supply and quality.	The proposed project would implement best management practices to protect groundwater and aquifer recharge area. See Section IV. I (Hydrology and Water Quality) for further discussion.
<b>Policy OS-3.3</b> (Water Conservation and Reclamation)- Encourage water conservation and the reuse of water.	The proposed project would promote water conservation through the use of drought-tolerant plant species in compliance with the water efficiency standards set forth in the California Green Building Standards Code.
<b>Goal OS-4: Improve air quality for a healthy City and region.</b>	
<b>Policy OS-4.1</b> (Air Quality Standards)- Work to comply with state and federal ambient air quality standards and to meet mandated annual air quality reduction targets.	This EIR's analysis employs the Butte County Air Quality Management District CEQA guidance, which is intended to achieve compliance with federal and state air quality standards at the local level. Refer to Section IV.C (Air Quality).



Policy	Comments
<b>Goal OS-5: Preserve agricultural areas for the production of local food and the maintenance of Chico's rural character.</b>	
<b>Policy OS-5.1</b> (Urban/ Rural Boundary)- Protect agriculture by maintaining the Greenline between urban and rural uses.	The project site is within the southeast quadrant of the City of Chico and would not affect the Greenline located along the City's western boundary.
<b>Policy OS-5.2</b> (Agricultural Resources)-Minimize conflicts between urban and agricultural uses by requiring buffers or use restrictions.	The project is not located adjacent to active agricultural uses where buffers or use restrictions are needed.
<b>Cultural Resources and Historic Preservation Chapter 11</b>	
<b>Goal CRHP-1: Protect and preserve archaeological, historical and other cultural resources to serve as significant reminders of the City's heritage and values.</b>	
<b>Policy CRHP-1.1</b> (Historic Preservation Program)- Maintain a comprehensive Historic Preservation Program that includes policies and regulations which protect and preserve the archaeological, historical and other cultural resources of Chico.	All relevant historical and cultural policies and regulations would be adhered to. A more detailed description of cultural and historical resources within the project site is included in Section IV.E (Cultural Resources) of this EIR.
<b>Goal CRHP-3: Engage in and facilitate preservation efforts with local preservation and cultural entities.</b>	
<b>Policy CRHP-3.1</b> (Partnerships to Preserve Heritage Resources)-Foster partnerships with interested parties to preserve heritage resources.	Local cultural entities would be contacted to provide consult if interested. All cultural resources are discussed further in Section IV. E (Cultural Resources).
<b>Safety Chapter 12</b>	
<b>Goal S-2: Minimize the threat to life and property from flooding and inundation.</b>	
<b>Policy S-2.1</b> (Potential Flood Hazards)- When considering areas for development, analyze and consider potential impacts of flooding.	Portions of the proposed development area are located within a mapped FEMA Flood Hazard Area. Analysis of potential flooding impacts can be found in Section IV.I (Hydrology and Water Quality) of this EIR.
<b>Goal S-3: Protect lives and property from seismic and geologic hazards.</b>	
<b>Policy S-3.1</b> (Potential Structural Damage)- Prevent damage to new structures caused by seismic, geologic, or soil conditions.	The project would comply with all applicable seismic safety design and building practices included within the California Building Code and City of Chico Municipal Code. Refer to Section IV.F (Geology and Soils) for further discussion.
<b>Goal S-4: Continue to provide effective and efficient fire protection and prevention services to Chico area residents.</b>	
<b>Policy S-4.3</b> (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.	The proposed project would be subject to the latest adopted edition of the California Fire Code at the time building permits are sought. This would ensure that the proposed project would comply with all applicable fire safety requirements.

Policy	Comments
<b>Goal S-5: Provide a safe, secure environment with responsive police services for the community.</b>	
<b>Policy S-5.5</b> (Design to Deter Crime)- Support the deterrence of crime through site planning and community design.	Future designs of commercial and multi-family residential lots within the project will be subject to City design review, which will include consideration of crime deterrence through site design.
<b>Noise Chapter 13</b>	
<b>Goal N-1: To benefit public health, welfare and the local economy, protect noise-sensitive uses from uses that generate significant amounts of noise.</b>	
<b>Policy N-1.1</b> (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.	The proposed development would not expose new residential uses to exterior noise levels that exceed the levels specified in Table N-1 of the General Plan. Refer to Section IV.K (Noise) for further discussion.
<b>Policy N-1.2</b> (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 level specified in Table N-2.	There are no significant non-transportation noise sources in the project vicinity. Refer to Section IV.K (Noise) for further discussion.
<b>Policy N-1.3</b> (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 measure may be identified and included in the project design. The requirements for the content of an acoustical analysis are outlined in Table N-3.	Consistent with this policy, refer to Section IV.K (Noise) for an acoustical analysis of the project.
<b>Policy N-1.5</b> (Proposed Projects Near Railroads)- Require site-specific noise studies for noise-sensitive projects which may be affected by railroad noise, and incorporate noise attenuation measures into the project design to reduce any impacts to the levels specified in Table N-1.	The proposed project is not located in the vicinity of a railroad and will not be affected by railroad noise.
<b>Goal N-2: Encourage noise attenuation methods that support the goals of the General Plan.</b>	
<b>Policy N-2.1</b> (Well-Designed Noise Mitigation)- Utilize effective noise attenuation measures that complement the Community Design Element's Goals.	Refer to Section IV.K (Noise) for further discussion.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Land use planning impacts associated with the proposed project would be ***less than significant***.

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## **IV. ENVIRONMENTAL IMPACT ANALYSIS**

### **K. NOISE**

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#### **INTRODUCTION**

The proposed Stonegate Subdivision (project) is a 313-acre mixed-use development located along the east and west side of Bruce Road, between East 20th Street and Skyway Road in Chico, CA. Specifically, the project proposes to subdivide the project site into a combination of open space, public right-of-way, park, single- and multi-family residential lots, and commercial uses. Figure IV.K-1 shows the project area and Figure IV.K-2 shows the site plan.

The purposes of this analysis are to quantify the existing noise and vibration environments, identify potential noise and vibration impacts resulting from the project, identify appropriate mitigation measures, and provide a quantitative and qualitative analysis of impacts associated with the project. Specifically, impacts are identified if project-related activities would cause a substantial increase in ambient noise or vibration levels at existing sensitive land uses in the project vicinity, or if traffic or project generated noise or vibration levels would exceed applicable City of Chico standards at the residences proposed within this development.

#### **ENVIRONMENTAL SETTING**

##### **Noise Fundamentals and Terminology**

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and are designated as sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, or Hertz (Hz). Definitions of acoustical terminology are shown in Appendix H-1. Figure IV.K-3 shows common noise levels associated with various sources.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by filtering the

frequency response of a sound level meter by means of the standardized A-weighting network. As a result, all sound levels reported in this study are in terms of A-weighted decibels.

### **Effects of Noise on People**

The effects of noise on people can be divided into three categories:

1. Subjective effects of annoyance, nuisance, dissatisfaction;
2. Interference with activities such as speech, sleep, and learning; and
3. Physiological effects such as hearing loss or sudden startling.

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

Generally, most noise is generated by transportation systems, primarily motor vehicles, aircraft, and railroads. Poor urban planning may also give rise to noise pollution, since juxtaposing industrial and residential land uses, for example, often adversely affects the residential acoustic environment. Prominent sources of indoor noise are office equipment, factory machinery, appliances, power tools, lighting hum, and audio entertainment systems. An important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment (or ambient noise) to which one has adapted. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 2013):

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dBA;
- Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA;
- A change in level of 5 dBA is a readily perceptible increase in noise level; and
- A 10-dBA change is recognized as twice as loud as the original source.





#### Legend

- # Long-Term Noise Measurement Sites
- A Short-Term Noise Measurement Sites
- Project Area



Figure IV.K-1. Noise Measurement Locations

Stonegate Vesting Tenative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Data Source: Bollard Acoustical Consultants





### Legend



STC-32: Upper-Floors



Proposed Solid Noise Barrier\*

\*Recommended 6-feet tall in height relative to building pad elevation.

Figure IV.K-2. Noise Site Plan

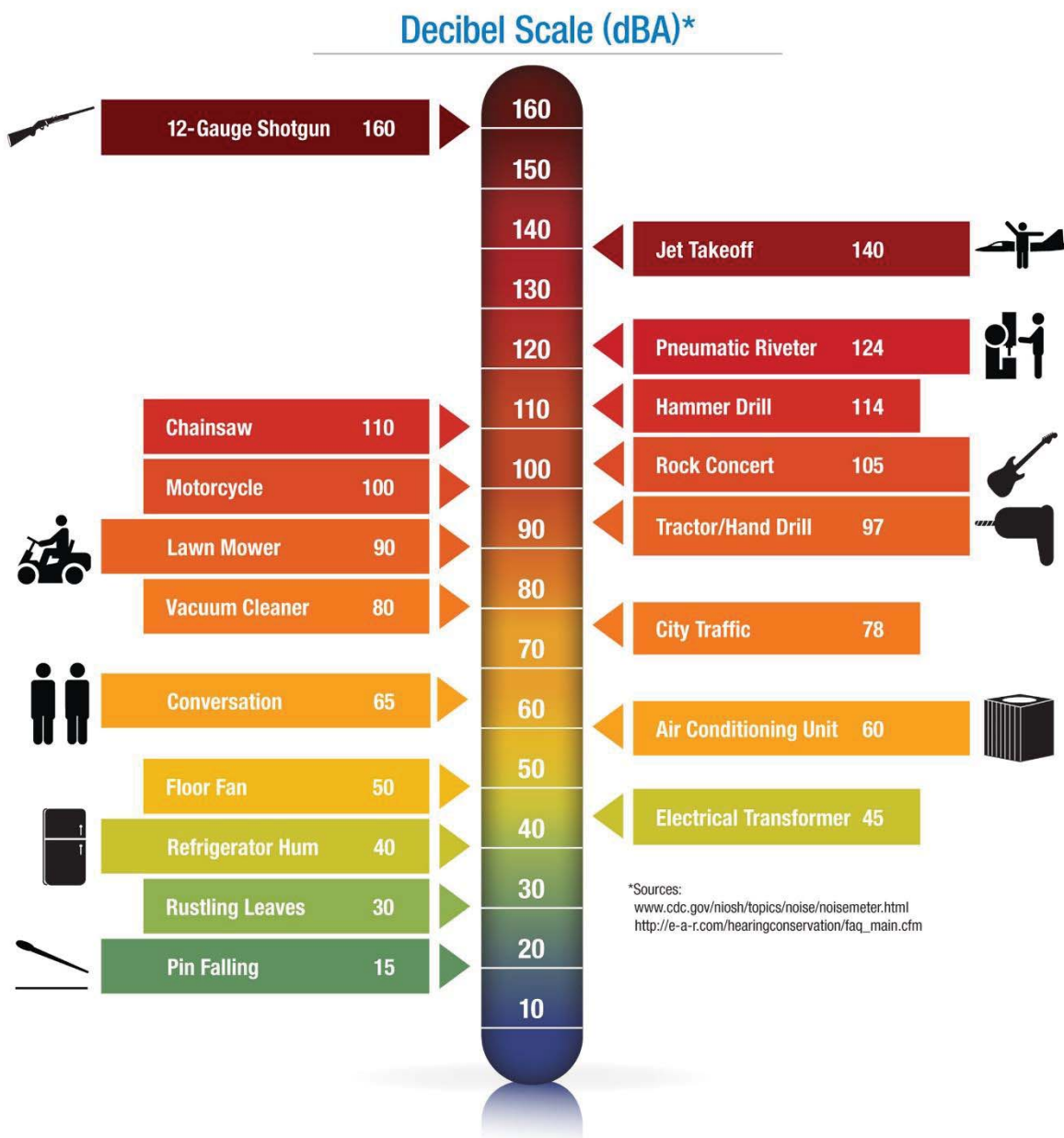
Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Data Source: Bollard Acoustical Consultants



**Figure IV.K-3**  
**Noise Levels Associated with Common Noise Sources**



These relationships occur in part because of the logarithmic nature of sound and the decibel system. Noise levels are measured on a logarithmic scale, instead of a linear scale. On a logarithmic scale, the sum of two noise sources of equal loudness is 3 dBA greater than the noise generated by only one of the noise sources (e.g., a noise source of 60 dBA plus another noise source of 60 dBA generate a composite noise level of 63 dBA). To apply this formula to a specific noise source, in areas where existing levels are dominated by traffic, a doubling in traffic volume will increase ambient noise levels by 3 dBA. Similarly, a doubling in heavy equipment use, such as the use of two pieces of equipment where one formerly was used, would also increase ambient noise levels by 3 dBA. A 3 dBA increase is the smallest change in noise level detectable to the average person. A change in ambient sound of 5 dBA can begin to create concern. A change in sound of 7 to 10 dBA typically elicits extreme concern and/or anger.

### **Noise Attenuation over Distance**

Stationary “point” sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of approximately 6+ dBA per doubling of distance from the source, depending upon environmental conditions (i.e., atmospheric conditions and noise barriers, either vegetative or manufactured, etc.). Widely distributed noises, such as a large industrial facility, spread over many acres or a street with moving vehicles (a “line” or “moving point” source), would typically attenuate at a lower rate, approximately 4 to 6 dBA per doubling distance from the source (also dependent upon environmental conditions) (Caltrans, 2013). Noise from large construction sites (with heavy equipment moving dirt and trucks entering and exiting the site daily) would have characteristics of both “point” and “line” sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance. Atmospheric absorption of sound varies depending on temperature and relative humidity, as well as the frequency content of the noise source. In general, “average day” atmospheric conditions result in attenuation at a rate of approximately 1.5 dB per thousand feet of distance (SAE ARP 866A, 1975).

### **Vibration Fundamentals**

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person’s response to vibration will depend on their individual sensitivity as well as the amplitude and frequency of the source.

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

As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. The maximum rate, or velocity of particle movement, is the commonly accepted descriptor of the vibration “strength”.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does the frequency of the event. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases.

According to the Transportation and Construction-Induced Vibration Guidance Manual (Caltrans, June 2004), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage (e.g., crack plaster). Ground vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. However, traffic, including heavy trucks traveling on a highway, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

### **Existing Overall Ambient Noise Environment at the Project Site**

The existing noise environment at the project site is primarily defined by traffic on Skyway Road, East 20th Street, and Bruce Road. Operations at the Franklin Construction asphalt plant to the southeast also contribute to the local noise environment, but to a lesser extent. To quantify existing noise levels at the project site, Bollard Acoustical Consultants, Inc. (BAC) conducted long-term (48-hour) noise level surveys at three (3) locations on and near the project site from July 19-21, 2016. The noise measurement sites are shown on Figure IV.K-1, identified as Sites 1-3.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used to conduct the noise level surveys. The meters were calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The results of the measurements are shown numerically and graphically in Appendices H-2 through H-13, and are summarized in Table IV.K-1.

**Table IV.K-1: Summary of Long-Term Ambient Noise Monitoring Results**

Location <sup>1</sup>	Date	L <sub>dn</sub> , dB	Average Measured Hourly Noise Levels (dB)					
			Daytime (7 a.m. to 10 p.m.)			Nighttime (10 p.m. to 7 a.m.)		
			L <sub>eq</sub>	L <sub>50</sub>	L <sub>max</sub>	L <sub>eq</sub>	L <sub>50</sub>	L <sub>max</sub>
Site 1 – Southern end of project site, approximately 350' from centerline of Skyway Road	7/19 – 7/20	60	55	53	66	53	47	62
	7/20 – 7/21	59	54	53	66	52	48	63
Site 2 – Northeast of project site, approximately 75' from centerline of East 20 <sup>th</sup> Street	7/19 – 7/20	55	53	44	70	47	39	69
	7/20 – 7/21	55	52	43	69	47	40	68
Site 3 –Southwestern end of project site, approximately 75' from centerline of Bruce Road	7/19 – 7/20	64	62	58	75	56	42	72
	7/20 – 7/21	63	61	57	75	55	44	71
Notes:								
<sup>1</sup> Long-term ambient noise monitoring locations are shown on Figure IV.K-1.								
Source: Bollard Acoustical Consultants, Inc. (2016)								

As shown in Table IV.K-1, measured average noise levels were lowest at Site 2. This was most likely due to the relatively low traffic volumes in comparison to Skyway Road and Bruce Road. Conversely, the highest average measured noise levels at Site 3 were due to a combination of higher traffic volumes and proximity of that site to Bruce Road. The noise level measurements conducted at Sites 1-3 on the project site were intended to quantify the existing general ambient noise environment, including the noise generation of traffic on Skyway Road, Bruce Road and East 20<sup>th</sup> Street.

### Existing Traffic Noise Environment

To allow the evaluation of relative changes in off-site traffic noise levels which would result from a project, the existing traffic noise environment must be quantified. The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used with the Calveno vehicle noise emission curves to quantify existing traffic noise levels on the project area roadways.

The FHWA Model was used with existing traffic data prepared by Fehr & Peers to predict existing traffic noise levels on the project area roadways. Table IV.K-2 shows the predicted existing traffic noise levels in terms of L<sub>dn</sub> at a reference distance of 100 feet from the roadway centerlines. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data for existing conditions are provided in Appendix H-14.

**Table IV.K-2: Existing Traffic Noise Levels and Distances to Traffic Noise Contours**

Roadway	Segment	Ldn @ 100 feet	Ldn Contour (feet)		
			70	65	60
East 20 <sup>th</sup> Street	West of SR-99 SB Ramps	61	24	53	113
East 20 <sup>th</sup> Street	SR-99 NB Ramps to Chico Mall	62	29	63	135
East 20 <sup>th</sup> Street	Chico Mall to Forest Ave.	62	27	59	126
East 20 <sup>th</sup> Street	Forest Ave. to Huntington Dr.	60	21	44	96
East 20 <sup>th</sup> Street	Huntington Dr. to Notre Dame Blvd.	59	18	39	85
East 20 <sup>th</sup> Street	Notre Dame Blvd. to Bruce Rd.	58	17	36	78
East 20 <sup>th</sup> Street	East of Bruce Rd.	52	7	15	31
Skyway Road	West of SR-99 SB Ramps	65	45	98	211
Skyway Road	SR-99 NB Ramps to Norte Dame Blvd.	65	50	107	232
Skyway Road	Norte Dame Blvd. to Forest Ave.	66	58	124	267
Skyway Road	Forest Ave. to Bruce Rd.	66	54	116	251
Notre Dame Boulevard	East of Bruce Rd.	66	58	125	270
Notre Dame Boulevard	East 20 <sup>th</sup> St. to Parkhurst St.	52	7	14	31
Notre Dame Boulevard	Parkhurst St. to Jasper Dr.	52	6	13	29
Notre Dame Boulevard	Jasper Dr. to Webster Dr.	52	7	14	30
Notre Dame Boulevard	Webster Dr. to Forest Ave.	52	7	14	31
Notre Dame Boulevard	Forest Ave. to Skyway Road	60	21	45	97
Notre Dame Boulevard	South of Skyway Road	57	13	29	62
Bruce Road	North of East 20 <sup>th</sup> St.	63	33	70	151
Bruce Road	East 20 <sup>th</sup> St. to Webster Dr.	66	57	122	264
Bruce Road	Webster Dr. to Raley Blvd.	66	57	122	263
Bruce Road	Raley Blvd. to Skyway Road	57	13	28	61
Bruce Road	South of Skyway Road	50	5	10	22
Webster Drive	Notre Dame Blvd. to Bruce Rd.	47	3	6	13
Source: FHWA-RD-77-108 with inputs prepared by Fehr & Peers & BAC analysis					

**Franklin Construction Asphalt Plant Noise Levels**

To quantify the noise generated from asphalt plant processing operations, BAC conducted short-term (15-minute) noise level measurements on the northern end of Franklin Skyway Asphalt Plant property on November 22, 2017. Figure IV.K-1 shows the location of the short-term measurement site, identified as Site C. The results from the noise measurement survey indicate that asphalt plant processing noise levels from the Franklin facility had a measured average noise level of 52 dB  $L_{eq}$  at a distance of 530 feet from the facility burner equipment, excluding traffic noise from nearby Skyway Road.

## REGULATORY SETTING

### Federal Regulations

There are no Federal noise level standards which would be directly applicable to this project.

### State of California Regulations

The California Department of Transportation (Caltrans) publication *Transportation and Construction Vibration Guidance Manual*, September 2013, contains criteria for the assessment of human response to vibration. Those criteria are provided in Table IV.K-3.

**Table IV.K-3: Human Response to Transient Vibration**

Human Response	Peak Particle Velocity (in/sec)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035
Source: Caltrans Transportation and Construction Vibration Guidance Manual, September 2013	

As shown in Table IV.K-3, a vibration level of 0.24 in/sec PPV is the level at which vibration becomes distinctly perceptible. As a result, this level is considered to be a conservative benchmark against which project vibration levels are evaluated in this assessment.

### Local Regulations

#### *City of Chico General Plan*

The Noise Element of the City of Chico General Plan contains goals, policies and actions to ensure that City residents are not subjected to noise beyond acceptable levels. Noise impacts associated with this project would occur if projected future traffic noise levels exceed City noise standards at proposed residences within the project site, or if the project would result in a substantial increase in traffic noise levels at existing residences in the immediate project vicinity. The City General Plan goals, policies and actions which are applicable to these to potential impacts are reproduced below:

**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.



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.

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-1.6 (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 N-1  
MAXIMUM ALLOWABLE NOISE LEVELS FROM  
TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas <sup>1</sup> Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB <sup>2</sup>
Residential	65 <sup>3</sup>	45	--
Transient Lodging	--	45	--
Hospitals, Nursing Homes	65 <sup>3</sup>	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	65 <sup>3</sup>	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	65 <sup>3</sup>	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes:

- 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.
- As determined for a typical worst-case hour during periods of use.
- Where it is not possible to reduce noise in outdoor activity areas to 65 dB L<sub>dn</sub>/CNEL or less using all feasible noise reduction measures, an exterior noise level of up to 70 dB L<sub>dn</sub>/CNEL may be allowed provided that interior noise levels are in compliance with this table.

TABLE N-2  
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 <sub>eq</sub> )	55	50
Intermittent Noise Level (L <sub>2</sub> or L <sub>max</sub> )	75	65

Notes:

- Noise levels are for planning purposes and may vary from the standards of the City's Noise Ordinance, which are for enforcement purposes.
- 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 L<sub>dn</sub>/CNEL.
- 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 L<sub>eq</sub> is at least 10 dBA lower than the standards.
- 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.

**TABLE N-3**  
**REQUIREMENTS FOR AN ACOUSTICAL ANALYSIS**

<b>An acoustical analysis prepared pursuant to the Noise Element shall:</b>
A. Be the financial responsibility of the applicant.
B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
D. Estimate existing and projected cumulative (20 years) noise levels in terms of $L_{dn}$ , CNEL, and the standards of <b>Table N-1</b> or <b>Table N-2</b> , as applicable, and compare those levels to the adopted policies of the Noise Element. Where the noise source consists of intermittent single events, address the impact on sleep disturbance.
E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element, giving preference to site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses.
F. Estimate noise exposure after the prescribed mitigation measures have been implemented.
G. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

### *City of Chico Municipal Code*

Policy N-1.6 of the City of Chico General Plan references maintaining special standards in the Municipal Code applicable to temporary construction activities. Specifically, Section 9.38.060 of the City of Chico Municipal Code (Categorical Exemptions) identifies noise exemptions and special standards for certain activities and noise sources. The following noise criteria is applicable to the project:

#### *9.38.060 Categorical exemptions.*

##### **B. Construction and Alteration of Structures.**

1. Notwithstanding any other provision of this chapter, between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays, and 7:00 a.m. and 9:00 p.m. on other days, construction, alteration or repair of structures shall be subject to one of the following limits:
  - a. No individual device or piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 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 25 feet from the equipment.
  - b. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.
2. 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, 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:

- a. No individual device or piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 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 25 feet from the equipment.
- b. The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on the Appendix G of the State CEQA Guidelines, a project could have a significant noise impact if it would cause any of the following conditions to occur:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b. Exposure of persons to or generation of excessive groundborne vibration or noise levels;
- c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- e. For a project located within an ALUP or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels;
- f. For a project within the vicinity of a private airstrip, the project would expose people residing or working in the project area to excessive noise levels.

Because this project is not located in an area which is impacted by aircraft noise, items e) and f) listed above would not apply. In addition, no appreciable sources of existing vibration were identified in the project area and the project operations would not introduce any substantive sources of vibration to the immediate project area. As a result, an analysis of groundborne vibration is not warranted for this project.

### Thresholds of Significance for Project-Related Noise Level Increases

Table IV.K-4 is based upon recommendations made in August 1992 by Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these criteria have been applied to other sources of noise similarly described in terms of cumulative noise exposure metrics such as the  $L_{dn}$ .

**Table IV.K-4: Significance of Changes in Cumulative Noise Exposure**

<b>Ambient Noise Level Without Project, <math>L_{dn}</math></b>	<b>Increase Required for Significant Impact</b>
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON )

According to the FICON criteria, an increase in noise from similar sources of 5 dB or more would be noticeable where the ambient level is less than 60 dB. Where the ambient level is between 60 and 65 dB, an increase in noise of 3 dB or more would be noticeable, and an increase of 1.5 dB or more would be noticeable where the ambient noise level exceeds 65 dB  $L_{dn}$ . The rationale for these criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

### **Project Impacts and Mitigation Measures**

For this project, noise impacts both due to and upon the proposed Stonegate Subdivision are assessed. Noise impacts due to (resulting from) the proposed project would occur if project-generated traffic or commercial operations causes a substantial increase in noise levels at existing noise-sensitive land uses in the immediate project vicinity.

Noise impacts upon the proposed project would result if projected future traffic noise exposure or noise from proposed commercial uses at the residences within the Stonegate Subdivision project site would exceed City of Chico noise standards at either the outdoor activity areas (backyards) or interior spaces of individual residences.

The following sections separately evaluate noise impacts due to, and upon, the project development.

**Off-Site Traffic Noise Impacts**

To assess noise impacts due to the project, existing and future traffic noise levels are predicted for the local area roadways, both with and without traffic generated by the proposed project. The project and no-project noise levels are compared and the noise level increases resulting from the project are assessed relative to the FICON criteria (Table IV.K-4).

*Impact NOISE-1: Increases in Day-Night Traffic Noise Levels at Existing Residences*

With development within the project area as a whole, traffic volumes on the local roadway network will increase. Those increases in daily traffic volumes will result in a corresponding increase in traffic noise levels. The FHWA Model was used with traffic input data provided by the project transportation consultant (Fehr & Peers) to predict existing, existing plus, cumulative, and cumulative plus project traffic noise levels and associated noise level increases. Results of the traffic noise analyses are summarized in Tables IV.K-5 and IV.K-6 for existing and future (cumulative) conditions, respectively. Appendices H-14 through H-17 contain the FHWA Model input data for all scenarios.



**Table IV.K-5: Existing Vs. Existing Plus Project Traffic Noise Levels**

Roadway	Segment	L <sub>dn</sub> @ 100 feet		Individual Roadway Increase, dB	Substantial Increase?
		E	E+P		
East 20 <sup>th</sup> Street	West of SR-99 SB Ramps	60.8	61.0	0.2	No
East 20 <sup>th</sup> Street	SR-99 NB Ramps to Chico Mall	62.0	62.4	0.2	No
East 20 <sup>th</sup> Street	Chico Mall to Forest Ave.	61.5	62.1	0.6	No
East 20 <sup>th</sup> Street	Forest Ave. to Huntington Dr.	59.7	61.0	1.3	No
East 20 <sup>th</sup> Street	Huntington Dr. to Notre Dame Blvd.	58.9	60.7	1.8	No
East 20 <sup>th</sup> Street	Notre Dame Blvd. to Bruce Rd.	58.4	60.1	1.7	No
East 20 <sup>th</sup> Street	East of Bruce Rd.	52.4	53.5	1.1	No
Skyway Road	West of SR-99 SB Ramps	64.9	65.0	0.1	No
Skyway Road	SR-99 NB Ramps to Norte Dame Blvd.	65.5	65.7	0.2	No
Skyway Road	Norte Dame Blvd. to Forest Ave.	66.4	66.8	0.4	No
Skyway Road	Forest Ave. to Bruce Rd.	66.0	66.6	0.0	No
Notre Dame Boulevard	East of Bruce Rd.	66.5	66.5	0.0	No
Notre Dame Boulevard	East 20 <sup>th</sup> St. to Parkhurst St.	52.4	52.0	-0.4	No
Notre Dame Boulevard	Parkhurst St. to Jasper Dr.	51.8	51.4	-0.4	No
Notre Dame Boulevard	Jasper Dr. to Webster Dr.	52.2	51.8	-0.4	No
Notre Dame Boulevard	Webster Dr. to Forest Ave.	52.4	53.1	0.7	No
Notre Dame Boulevard	Forest Ave. to Skyway Road	59.8	59.6	-0.2	No
Notre Dame Boulevard	South of Skyway Road	56.9	56.8	-0.1	No
Bruce Road	North of East 20 <sup>th</sup> St.	62.7	62.9	0.2	No
Bruce Road	East 20 <sup>th</sup> St. to Webster Dr.	66.3	63.4	0.1	No
Bruce Road	Webster Dr. to Raley Blvd.	66.3	63.3	-3.0	No
Bruce Road	Raley Blvd. to Skyway Road	56.8	58.5	1.7	No
Bruce Road	South of Skyway Road	50.1	50.6	0.5	No
Webster Drive	Notre Dame Blvd. to Bruce Rd.	46.7	49.6	2.9	No
Source: FHWA-RD-77-108 with inputs prepared by Fehr & Peers & BAC analysis					

**Table IV.K-6: Cumulative Vs. Cumulative Plus Project Traffic Noise Levels**

Roadway	Segment	L <sub>dn</sub> @ 100 feet		Individual Roadway Increase, dB	Substantial Increase?
		C	C+P		
East 20 <sup>th</sup> Street	West of SR-99 SB Ramps	62.5	62.6	0.1	No
East 20 <sup>th</sup> Street	SR-99 NB Ramps to Chico Mall	64.1	64.4	0.3	No
East 20 <sup>th</sup> Street	Chico Mall to Forest Ave.	64.1	64.3	0.2	No
East 20 <sup>th</sup> Street	Forest Ave. to Huntington Dr.	62.7	63.1	0.4	No
East 20 <sup>th</sup> Street	Huntington Dr. to Notre Dame Blvd.	62.9	63.3	0.4	No
East 20 <sup>th</sup> Street	Notre Dame Blvd. to Bruce Rd.	63.6	63.9	0.3	No
East 20 <sup>th</sup> Street	East of Bruce Rd.	58.4	58.6	0.2	No
Skyway Road	West of SR-99 SB Ramps	65.0	66.1	1.1	No
Skyway Road	SR-99 NB Ramps to Norte Dame Blvd.	65.6	65.7	0.1	No
Skyway Road	Norte Dame Blvd. to Forest Ave.	66.4	66.8	0.3	No
Skyway Road	Forest Ave. to Bruce Rd.	66.0	66.3	0.3	No
Notre Dame Boulevard	East of Bruce Rd.	67.5	67.6	0.1	No
Notre Dame Boulevard	East 20 <sup>th</sup> St. to Parkhurst St.	54.7	54.6	-0.1	No
Notre Dame Boulevard	Parkhurst St. to Jasper Dr.	54.5	54.1	-0.4	No
Notre Dame Boulevard	Jasper Dr. to Webster Dr.	54.2	54.0	-0.2	No
Notre Dame Boulevard	Webster Dr. to Forest Ave.	54.4	54.5	0.1	No
Notre Dame Boulevard	Forest Ave. to Skyway Road	60.9	60.8	-0.1	No
Notre Dame Boulevard	South of Skyway Road	56.4	56.3	0.1	No
Bruce Road	North of East 20 <sup>th</sup> St.	65.7	65.8	0.1	No
Bruce Road	East 20 <sup>th</sup> St. to Webster Dr.	66.3	66.3	0.0	No
Bruce Road	Webster Dr. to Raley Blvd.	66.3	66.3	0.0	No
Bruce Road	Raley Blvd. to Skyway Road	60.1	60.9	0.8	No
Bruce Road	South of Skyway Road	50.3	51.6	1.5	No
Webster Drive	Notre Dame Blvd. to Bruce Rd.	46.7	48.1	1.4	No

Source: FHWA-RD-77-108 with inputs prepared by Fehr &amp; Peers &amp; BAC analysis



As mentioned previously, the criteria for determination of a substantial project-related increase in traffic noise levels is as follows:

- 5 dB increase where baseline levels are below 60 dB L<sub>dn</sub>.
- 3 dB increase where baseline levels are between 60 – 65 dB L<sub>dn</sub>.
- 1.5 dB increase where baseline levels exceed 65 dB L<sub>dn</sub>.

The results from the analysis of 24 roadway segments shown in Tables IV.K-4 and IV.K-5 indicate that the project-related increases in traffic noise levels on the local roadway network would not exceed the standards of significance. As a result, off-site traffic noise impacts resulting from the development of the Stonegate Subdivision are considered to be **less-than-significant** and no mitigation measures would be required.

### Noise Impacts Resulting from Future Commercial Uses

The project proposes commercial areas at the southern, western, and eastern portions of the project area, as indicated on Figure IV.K-1. According to the project description, the commercial areas will likely include medical office buildings (southern area, Lot 472), an outdoor retail center (western area, Lot 471), and a gas station (eastern area, Lot 474). The primary noise sources commonly associated with these types of commercial operations include parking lot movements, on-site delivery truck circulation, and loading dock operations. Due to the location of the proposed commercial areas of the development, it is possible that noise from future commercial operations could exceed the applicable City of Chico noise standards at the nearest existing and future noise-sensitive uses (single-family residences).

As noted in the Regulatory Framework section of this report, the City of Chico requires that noise levels from non-transportation sources, such as those proposed by the above mentioned noise sources, not exceed 55 dB L<sub>eq</sub> and 75 dB L<sub>max</sub> during daytime hours (7:00 a.m. to 10:00 p.m.), or 50 dB L<sub>eq</sub> and 65 dB L<sub>max</sub> during nighttime hours (10:00 p.m. to 7:00 a.m.). These noise standards are to be applied at the outdoor activity areas of noise-sensitive uses.

#### *Impact NOISE-2: Commercial Parking Area Noise at Noise-Sensitive Uses*

Although the project materials include illustrative site plans depicting possible configurations of the planned commercial areas within the development, the exact configurations for the buildings and parking areas are currently unknown. Detailed development plans for all commercial and multi-family residential lots within the project will be reviewed at a future date as part of the City's discretionary Site Design and Architectural Review process. As a result, the following section provides a generalized assessment of commercial parking area noise exposure at nearby residentially-zoned properties based upon conservative estimates of future parking area capacities.

As a means of determining potential noise exposure due to commercial area parking lot activities, Bollard Acoustical Consultants, Inc. (BAC) utilized specific parking lot noise level measurements conducted by BAC. Specifically, a series of individual noise measurements were conducted of multiple vehicle types arriving and departing a parking area, including engines starting and stopping, car doors opening and closing, and persons conversing as they entered and exited the vehicles. The results of those measurements revealed that individual parking lot movements generated mean noise levels of 65 dB SEL at a reference distance of 50 feet.

For a conservative assessment of commercial parking area noise generation, it was assumed that individual parking lot areas (of which there could be more than one) could accommodate up to 100 vehicles. It was also assumed that a parking area could fill or empty during a peak hour of business operations. During hours of operation, it is likely that parking area activity would be more spread out. Parking area noise exposure was determined using the following equation:

$$\text{Peak Hour } L_{eq} = 65 + 10 \cdot \log(N) - 35.6$$

Where 65 is the SEL for a single automobile parking operation at a reference distance of 50 feet, N is the number of parking area operations in a peak hour, and 35.6 is 10 times the logarithm of the number of seconds in an hour.

Using BAC parking lot noise measurement data and the equation provided above, parking lot noise exposure computes to approximately 50 dB  $L_{eq}$  and 65 dB  $L_{max}$  at a distance of 50 feet from the effective noise center of a parking lot. These results indicate that parking lot activity noise would be satisfactory with the City of Chico's 50 dB  $L_{eq}$  and 65 dB  $L_{max}$  nighttime noise level standards provided the effective noise center of the parking area is located at least 50 feet from noise-sensitive receptor locations. Due to the spatial requirements of new commercial parking lots (spaces must be 8-9 feet in width, 16-20 feet in depth, with drive aisles 13-24 feet in width), it is not likely feasible that a 100-space parking area would have an effective noise center less than 50 feet from its edge. However, since the future configuration of parking areas on the commercial lots within the project cannot be predicted at this time, there remains a slight potential that parking lot noise exposure could exceed the City's nighttime noise level standards. This impact is considered ***potentially significant***.

#### *Mitigation Measure NOISE-2: Commercial Parking Area Noise at Existing Noise-Sensitive Uses*

To satisfy the City of Chico's noise level standards at noise-sensitive uses near commercial lots within the project, commercial parking areas within the project shall be designed such that no residentially-zoned property would have 100 or more parking spaces within 100 feet, unless a solid noise barrier of 6 feet in height is included at the interface of the commercial parking area and the residential property.

*Impact NOISE-3: On-Site Commercial Truck Circulation Noise at Noise-Sensitive Uses*

Although the project materials include illustrative site plans depicting possible configurations of the planned commercial areas within the development, the exact configurations for the buildings and future delivery truck circulation routes are currently unknown. Detailed development plans for all commercial and multi-family residential lots within the project will be reviewed at a future date as part of the City's discretionary Site Design and Architectural Review process. As a result, the following section provides a generalized assessment of commercial truck circulation noise exposure based upon conservative estimates of future delivery truck volumes.

Because the City's noise standards are provided in terms of both individual maximum noise levels and hourly average noise levels, it is necessary to identify the number of truck movements occurring during a typical busy hour of operations to assess compliance with the  $L_{eq}$ -based standards. For the purposes of predicting hourly average noise levels for comparison against the City's noise standards, it was assumed that 2 heavy trucks could have store deliveries during the same worst-case hour.

Heavy truck arrivals and departures, and on-site truck circulation, will occur at low speeds. According to BAC file data, single-event truck passby noise levels are approximately 74 dB  $L_{max}$  and 83 dB SEL at a reference distance of 50 feet. Based on a conservative estimate of 2 heavy truck trips per hour, and an SEL of 83 dB SEL per passby, the hourly average noise level generated by on-site circulation computes to 50 dB  $L_{eq}$  at a reference distance of 50 feet from the passby route. Thus, depending upon the location of the truck passby routes relative to outdoor activity areas of nearby residences, noise exposure from single-event truck passbys could exceed the City's daytime and nighttime noise standards. This impact is considered ***potentially significant***.

*Mitigation Measure NOISE-3: On-Site Commercial Truck Circulation Noise at Noise-Sensitive Uses*

To satisfy the City of Chico's noise level standards at noise-sensitive uses near commercial lots within the project, commercial development on Lots 471 and 474 shall be designed to maintain on-site delivery truck circulation routes a minimum distance of 50 feet from property lines shared with existing or future noise-sensitive residences in the project vicinity. Alternatively, a future acoustic study prepared by a qualified professional and based on the specific commercial site design may be used to demonstrate that a lesser separation would meet the City's noise level standards. Such future acoustic study shall state all assumptions, including specifications for a noise barrier as appropriate, and be subject to review and approval by the Chico Community Development Director.

*Impact NOISE-4: On-Site Commercial Loading Dock Noise at Noise-Sensitive Uses*

In addition to noise generated by on-site truck circulation, noise could also be generated at delivery truck loading docks. The primary noise sources associated with loading dock operations are heavy trucks stopping (air brakes), backing into the loading docks (back-up alarms), and pulling out of the loading docks (revving engines). Once trucks have backed into a loading dock, they are unloaded from the inside of the store using a fork lift or hand cart, and most of that unloading noise is contained within the building and truck trailer.

To quantify the noise generated by truck loading dock operations, BAC utilized noise level data obtained from BAC field measurements of a commercial loading dock facility. According to BAC measurement data, loading dock average and maximum noise levels are approximately 63 dB  $L_{eq}$  and 75 dB  $L_{max}$  at a reference distance of 50 feet. Thus, depending upon the location of the loading docks relative to outdoor activity areas of nearby residences, noise exposure from loading dock operations could exceed the City's daytime and nighttime noise standards. As a result, this impact is considered to be **potentially significant**.

*Mitigation Measure NOISE-4: On-Site Commercial Loading Dock Noise at Noise-Sensitive Uses*

To satisfy the City of Chico's noise level standards at residentially-zoned properties nearest Lots 471, 472 and 474, the future commercial development on these commercial lots shall be designed to locate all loading docks a minimum distance of 125 feet from property lines abutting residentially-zoned properties. Alternatively, a future acoustic study prepared by a qualified professional and based on the specific commercial site design, may be used to demonstrate that a lesser separation would meet the City's noise level standards. Such future acoustic study shall state all assumptions, including specifications for a noise barrier as appropriate, and be subject to review and approval by the Chico Community Development Director.

**Off-Site Noise Impacts Resulting from Project Construction***Impact NOISE 5: Project Construction Noise at Existing Noise-Sensitive Uses*

During project construction, heavy equipment would be used for grading excavation, paving, and building construction, which would increase ambient noise levels when in use. Activities involved in typical construction would generate maximum noise levels, as indicated in Table IV.K-7, ranging from 70 to 90 dB at a distance of 50 feet. Not all of these construction activities would be required of this project.

It should be noted that because project construction activities would not include pile driving or other substantial sources of vibration, and because vibration levels dissipate rapidly from earthmoving equipment uses for site grading, no vibration-related impacts are identified at any of the nearest sensitive receptors to the project site during project construction.

**Table IV.K-7: Typical Construction Equipment Noise**

Equipment	Typical Noise Level (dBA) 50 feet from Source		Distance to Noise Contours, L <sub>eq</sub> (dBA)		
	L <sub>max</sub>	L <sub>eq</sub>	70	65	60
Air compressor	76	80	105	187	334
Auger/rock drill	85	78	133	236	420
Backhoe/front-end loader	80	76	105	187	334
Boring hydraulic jack/ power unit	80	77	118	210	374
Compactor (ground)	80	73	74	133	236
Concrete batch plant	83	75	94	167	297
Concrete mixer truck	85	81	187	334	594
Concrete mixer truck (vibratory)	80	73	74	133	236
Concrete pump truck	82	75	94	167	297
Concrete saw	90	83	236	420	748
Crane	85	77	118	210	374
Dozer/grader/excavator/scrapper	85	81	187	334	594
Drill rig truck	84	77	118	210	374
Generator	82	79	149	265	472
Gradall	85	81	187	334	594
Hydraulic break ram	90	80	167	297	529
Jackhammer	85	78	133	236	420
Impact hammer	90	83	236	420	748
Pavement scarifier/roller	85	78	133	236	420
Paver	85	82	210	374	667
Pneumatic tools	85	82	210	374	667
Pumps	77	74	83	149	265
Truck (dump/flat bed)	84	80	167	297	529
Source: City of Chico General Plan Update DEIR (2010)					

Depending on the distances from the construction areas to nearby existing noise-sensitive uses, construction activities associated with the project could result in temporary and periodic increases in ambient noise levels at nearby receptors.

Policy N-1-6 of the City of Chico General Plan references maintaining special standards in the Municipal Code applicable to temporary construction activities. Specifically, Section 9.38.060 of the Municipal Code (Categorical Exemptions) states that construction-related activities that occur between the hours of 10:00 a.m. and 6:00 p.m. on Sunday and holidays, and 7:00 a.m. and 9:00 p.m. on weekdays, shall comply with the following limitations:

- a. No individual device or piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 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 25 feet from the equipment.
- b. The noise level at any point outside of the property plane of the project shall not exceed 86 dBA.

Due to the short-term nature of construction noise, the intermittent frequency of construction noise, and the required compliance with the construction noise standards established in Section 9.38.060 of the City of Chico Municipal Code, construction activities are not anticipated to result in substantial temporary or periodic increases in ambient noise levels in the project vicinity. As a result, the impact of construction noise exposure at existing residences is considered to be **less-than-significant** and no mitigation measures would be required.

### **Noise Impacts upon the Stonegate Subdivision**

The project proposes the creation of 316 single-family residential lots and two larger multi-family residential lots. As noted in the Regulatory Section of this report, the City of Chico requires that future traffic noise levels in new residential developments not exceed 65 dB  $L_{dn}$  at outdoor activity areas and 45 dB  $L_{dn}$  inside residences. As indicated in the City of Chico General Plan, a common area (e.g., parks, pools, courtyards, etc.) may be designated as the outdoor activity areas in multi-family residential developments.

Additionally, the City of Chico requires that noise levels from non-transportation sources not exceed 55 dB  $L_{eq}$  and 75 dB  $L_{max}$  during daytime hours (7:00 a.m. to 10:00 p.m.), or 50 dB  $L_{eq}$  and 65 dB  $L_{max}$  during nighttime hours (10:00 p.m. to 7:00 a.m.) at residential uses. These standards are applicable to noise levels generated from proposed commercial operations within the development, as well as for existing uses in the project area affecting the proposed residences of the development.

### **On-Site Traffic Noise Impacts**

#### *Traffic Noise Prediction Model Calibration*

The FHWA Model provides reasonably accurate traffic noise predictions under “ideal” roadway conditions. Ideal conditions are generally considered to be long straight roadway segments with uniform vehicle speeds, a flat roadway surface, good pavement conditions, a statistically large volume of traffic, and an unimpeded view of the roadway from the receiver location. Such



conditions appeared to be in effect at the project site. Nonetheless, BAC conducted a calibration of the FHWA Model through site-specific traffic noise level measurements and concurrent traffic counts along Bruce Road and Skyway Road.

The calibration process was performed at two (2) locations on the project site on July 19, 2016. The measurements were conducted at a height of 5 feet above existing grade to quantify traffic noise levels at the future outdoor activity areas of residences proposed nearest to Bruce Road and Skyway Road. The traffic noise measurements were conducted at short-term measurement Sites A and B, shown on Figure IV.K-1. Detailed results of this procedure are provided in Appendix H-18 & H-19.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used to conduct the traffic calibration noise level surveys. The meters were calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

As indicated in Appendix H-18, the FHWA Model was found to accurately predict Bruce Road traffic noise levels (within 0.5 dB). The data in Appendix H-19 also indicate that the FHWA Model over-predicted Skyway Road traffic noise levels by 2.4 dB. Nonetheless, no calibration offset was applied to the model in order to provide a conservative assessment of future Skyway Road traffic noise levels at the project site.

#### *Impact NOISE-6: Future Exterior Traffic Noise Levels at Proposed Residences*

##### Single-Family Residential Lots

The FHWA Model was used with future (Cumulative plus Project) traffic data obtained from the project traffic study (Fehr and Peers) to predict future traffic noise levels from East 20<sup>th</sup> Street, Bruce Road, and Skyway Road at the project site. The FHWA Model inputs and predicted future traffic noise levels at the project site are shown in Appendix H-20 through H-22. The results are summarized in Table IV.K-8.

The predicted future traffic noise levels at the first-floor facades and outdoor activity areas of the residences proposed along Bruce Road take into consideration the shielding provided by the proposed solid noise barrier, as indicated on Figure IV.K-2. Barrier insertion loss calculation worksheets are provided as Appendix H-23 & H-24. No shielding was taken into consideration for upper-floor building facades of these proposed residences.

**Table IV.K-8: Predicted Future Exterior Traffic Noise Levels<sup>1</sup>**

Roadway	Residential Lot(s)	Location	Distance from Centerline (ft) <sup>2</sup>	Offset (dB) <sup>3</sup>	L <sub>dn</sub> (dB) <sup>4</sup>
East 20 <sup>th</sup> Street	37, 38, 97, 98 121-130	Outdoor activity areas	50		63
		First-floor facades	60		61
		Upper-floor facades	60	+3	64
Bruce Road	5-18, 181-189 218-231	Outdoor activity areas	75		62
		First-floor facades	90		61
		Upper-floor facades	90	+9	70
Skyway Road	428, 429	Outdoor activity areas	265		63
		First-floor facades	285		63
		Upper-floor facades	285	+3	66
Notes:					
<sup>1</sup> A complete listing of FHWA Model inputs and results are provided in Appendix H-14 through H17.					
<sup>2</sup> Distances measured from indicated location to the centerline of the roadways.					
<sup>3</sup> A +9 dB offset was applied to the upper-floor facades due to reduced ground absorption at elevated floor levels (+3 dB), and lack of shielding provided by the proposed noise barrier (+6 dB).					
<sup>4</sup> Predicted future traffic noise levels at first-floor building facades and outdoor activity areas of residences proposed along Bruce Road take into the consideration the shielding provided by the proposed solid noise barrier along the property boundaries, as indicated on Figure IV.K-2. Barrier insertion loss calculation worksheets are provided in Appendix H-23 & H-24. No shielding was taken into consideration for upper-floor building facades of these residences.					
Source: Bollard Acoustical Consultants, Inc. (2017)					

The Table IV.K-7 data, which represent predicted future (cumulative plus project) traffic noise levels within the project area, indicate that traffic noise levels are predicted to satisfy the City of Chico 65 dB L<sub>dn</sub> exterior noise standard at the proposed outdoor activity areas (backyards) of the residences proposed nearest to East 20<sup>th</sup> Street and Skyway Road. In addition, future Bruce Road traffic noise levels are also predicted to satisfy the City's 65 dB L<sub>dn</sub> exterior noise standard provided that the proposed solid noise barrier is a minimum of 6-feet in height relative to graded backyard elevations (the sound wall along Bruce Road is proposed to be seven feet in height). With the proposed noise barrier along Bruce Road, this impact is considered to be **less-than-significant**.



### Multi-Family Residential Lots

In addition to the construction of approximately 316 single-family residential lots, the project also proposes the development of two larger multi-family residential lots. As indicated in Figure IV.K-1, both multi-family residential lots are proposed to be located adjacent to Bruce Road. Although the project site plans contain the general locations of the proposed multi-family lots, the locations of the buildings and common outdoor activity area(s) are currently unknown.

The FHWA Model and future (Cumulative Plus Project) traffic data to predict future traffic noise levels from Bruce Road at the proposed multi-family residential lots. The results from that analysis indicate that future Bruce Road exterior traffic noise levels are predicted to be 65 dB  $L_{dn}$  at a distance of 130 feet from the centerline of Bruce Road. Thus, future Bruce Road traffic noise exposure would exceed the City of Chico 65 dB  $L_{dn}$  exterior noise level standard should the common outdoor activity areas of the proposed multi-family residential lots be located within 130 feet from the centerline of Bruce Road. This impact is considered ***potentially significant***.

#### *Mitigation Measure NOISE-6: Future Exterior Traffic Noise Levels at Proposed Residences*

To satisfy the City of Chico's exterior noise level standard at the common outdoor areas of the proposed multi-family residential lots within the development (Lots 470 and 473), these future common outdoor areas shall be designed to: (1) maintain a minimum setback distance of 130 feet from the centerline of Bruce Road, (2) be shielded by the proposed structures to completely block the common outdoor area(s) from view of Bruce Road, or (3) include a solid noise barrier meeting specifications outlined in a supporting acoustic study prepared by a qualified professional, subject to review and approval by the Community Development Director.

#### *Impact NOISE-7: Future Interior Traffic Noise Levels at Proposed Residences*

### Single-Family Residential Lots

The worst-case traffic noise exposure within this development would occur at the lots proposed closest to East 20<sup>th</sup> Street, Bruce Road, and Skyway Road. According to Table IV.K-8, the predicted future  $L_{dn}$  value at the first-floor facades of the residences nearest to these roadways would range from 61-63 dB  $L_{dn}$ , including the shielding from the proposed noise barrier as indicated on Figure IV.K-2.

Due to reduced ground absorption at elevated positions, upper-level traffic noise levels from East 20<sup>th</sup> Street and Skyway Road would approach 64 and 66 dB  $L_{dn}$ , respectively. In addition, because upper-level locations along Bruce Road would not necessarily benefit from the proposed noise barriers, future traffic noise levels along this roadway are predicted to be approximately 70 dB  $L_{dn}$  at upper-floor locations. In order to satisfy the City of Chico 45 dB  $L_{dn}$  interior noise level standard within all floors of buildings closest to these roadways, a minimum noise reduction of at least 25 dB would be required of the building facades.

Standard residential construction (wood or stucco siding, STC-27 windows, door weather-stripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of at least 25 dB with windows closed and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for all residences constructed adjacent to East 20<sup>th</sup> Street, Bruce Road, and Skyway Road. As a result, this impact is considered ***less-than-significant***.

#### Multi-Family Residential Lots

As mentioned previously, multi-family residential lots are proposed to be located adjacent to Bruce Road. Although the project materials include illustrative site plans depicting possible configurations for development on the proposed multi-family lots, the exact locations of the buildings are currently unknown. Detailed development plans for all commercial and multi-family residential lots within the project will be reviewed at a future date as part of the City's Site Design and Architectural Review process.

According to the FHWA Model, future exterior traffic noise levels from Bruce Road are predicted to be approximately 67 dB L<sub>dn</sub> at a distance of 90 feet from the centerline of Bruce Road. Due to reduced ground absorption at elevated positions, upper-level traffic noise levels from Bruce Road would approach 70 dB L<sub>dn</sub> at this same distance.

Based on the aforementioned noise level reduction achieved from standard residential construction (at least 25 dB with windows closed), predicted interior traffic noise levels within multi-family residences proposed at least 90 feet from the centerline of Bruce Road would satisfy the City of Chico 45 dB L<sub>dn</sub> interior noise level standard without the need for additional mitigation measures. However, should multi-family residential buildings be proposed within 90 feet from the centerline of Bruce Road, predicted interior traffic noise levels from Bruce Road could exceed the City's 45 dB L<sub>dn</sub> interior noise level standard at the upper-levels of proposed multi-family residential buildings. This impact is considered ***potentially significant***.

#### *Mitigation Measure NOISE-7: Future Traffic Noise Levels at Proposed Residences*

Should the building facades of the future multi-family residences be proposed within 90 feet of the centerline of Bruce Road, all upper floor windows of the residential structures located within that setback distance and within line-of-sight of Bruce Road shall be upgraded to STC-32.

### *Impact NOISE-8: Existing Asphalt Processing Plant Noise Levels at Proposed Residences*

As indicated in Figure IV.K-1, an existing asphalt processing plant (Franklin Skyway Asphalt Plant) is located southeast of the proposed development across Skyway Road. Due to the location of the asphalt plant, it is possible that noise generation associated from facility operations could exceed the City's noise standards at residences proposed within the development.

As noted in the Regulatory Framework section of this report, the City of Chico requires that noise levels from non-transportation sources, such as those from the Franklin Skyway Asphalt Plant, not exceed 55 dB  $L_{eq}$  and 75 dB  $L_{max}$  during daytime hours (7:00 a.m. to 10:00 p.m.), or 50 dB  $L_{eq}$  and 65 dB  $L_{max}$  during nighttime hours (10:00 p.m. to 7:00 a.m.). These noise standards are to be applied at the outdoor activity areas of noise-sensitive uses. Because processing equipment used at asphalt plants are considered to be steady state noise sources (i.e., continuous noise sources that typically do not fluctuate by more than 5 dB), it is appropriate to apply the City's daytime and nighttime noise level standards of 55 and 50 dB  $L_{eq}$  (respectively) to this analysis.

Primary noise sources commonly associated with asphalt processing plants are the burners and dryer drum equipment. To quantify the noise generated from asphalt plant processing operations, BAC conducted short-term (15-minute) noise level measurements on the northern end of Franklin Skyway Asphalt Plant property on November 22, 2017. Figure IV.K-1 shows the location of the short-term measurement site, identified as Site C. The results from the noise measurement survey are summarized in Table IV.K-9.

**Table IV.K-9: Summary of Short-Term Noise Measurement Survey  
for Franklin Construction Asphalt Plant, November 22, 2017**

Location <sup>1</sup>	Measured Noise Level (dB) <sup>2,3</sup>	
	$L_{eq}$	$L_{max}$
Site C – Northern end of asphalt plant site, approximately 530' from facility burner equipment	52	56
Notes: <sup>1</sup> Noise level measurement location is shown on Figure IV.K-1. <sup>2</sup> Measured noise levels exclude traffic noise Skyway Road, approximately 80 feet from roadway centerline. <sup>3</sup> Short-term noise level measurement was 15 minutes in duration. Source: Bollard Acoustical Consultants, Inc. (2017)		

As indicated in Table IV.K-9, asphalt plant processing noise levels from the Franklin facility had a measured average noise level of 52 dB  $L_{eq}$  at a distance of 530 feet from the facility burner equipment, excluding traffic noise from nearby Skyway Road. According to BAC staff observations, the burner equipment was in operation during the noise measurement survey. When projected to the outdoor activity area (backyard) of the nearest proposed residence of the development (single-family residential Lot 429, approximately 900 feet to the north of the

asphalt plant site), noise levels from asphalt plant processing operations are predicted to be approximately 47 dB L<sub>eq</sub>. Based on the analysis and results presented above, noise levels from operations at the Franklin Skyway Asphalt Plant are predicted to satisfy the City of Chico daytime and nighttime noise level standards at the nearest outdoor activity areas (backyards) proposed within the development. As a result, this impact is considered to be ***less-than-significant***. However, disclosure statements should be provided to residences nearest to the asphalt plant (Lots 425-429) notifying them of the potential for elevated noise levels during asphalt plant hours of operation.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

All project impacts related to Noise are ***less than significant*** after implementation of *Mitigation Measures NOISE-2 through NOISE-7*.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### L. POPULATION AND HOUSING

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#### INTRODUCTION

This section addresses the potential impacts to population and housing with respect to the proposed project and includes an evaluation of the existing population, employment and housing in the project area and analyzes the potential for adverse impacts on population and housing resulting from implementation of the proposed project. This analysis is limited to those socioeconomic issues that could result in a direct change on the physical environment (CEQA Guidelines Section 15131).

#### ENVIRONMENTAL SETTING

##### Population

Population, housing, and employment data are available on city, county, regional, and state levels. According to the California Department of Finance ("DOF") Unit Survey data, on January 1, 2017, the estimated population for the City of Chico was 93,383. This number represents a 1.37% (or 1266 person) increase from 2016. The approximately 1.37% growth rate is higher than the 0.89% growth rate seen from 2015 to 2016. However, this growth rate is generally consistent with the 1.18% average City growth experienced over the last five years. Table IV.L-1 below shows population growth from the years 2012 through 2017.

**Table IV.L-1**  
**City of Chico Population 2012 to 2017**

Year	Population <sup>1</sup>	Percent Growth
2012	88,608	
2013	89,283	1.38%
2014	90,217	1.05%
2015	91,306	1.21%
2016	92,117	0.89%
2017	93,383	1.37%
Notes: <sup>1</sup> Estimates as of January 1st for each year. Source: California Department Finance. 2017.		

## METHODOLOGY

### Population Projections

The 2030 General Plan projected a population of 139,713 by the year 2030. This projection assumed a continuation of the City's historic 2% growth rate. Since General Plan adoption in 2011, Chico's population increased by 6,564 people. For comparison sake, for the 5 year period between 2012 and 2017, the City's average growth rate was approximately 1.18 percent. If the recent 1.18% growth rate is projected forward from the 2017 population of 93,383, the estimated 2030 General Plan build-out population of 139,713 would occur in the 2050s. Given that Chico is experiencing a lower growth rate than assumed for the General Plan, the City's population in 2030 could be significantly less than the 139,713 projected.

#### *BCAG's Regional Growth Forecasts (2014-2040)*

Every four years, the Butte County Association of Governments ("BCAG") prepares long-term regional growth forecasts. Low, medium, and high growth forecasts are developed to provide flexibility and acknowledge the uncertainty inherent in long-range projections. BCAG's population forecasts for Chico include a "low" compound annual growth rate of 1.2% and a "high" compound annual growth rate of 1.6%. These growth rates forecast a population of between 106,827 and 114,460 for the year 2030.<sup>1</sup> As discussed above, the City of Chico's average growth rate is 1.18%, therefore the "low" scenario from the BCAG regional growth forecast provides a more accurate growth projection than what is provided in the General Plan. For the purpose of this analysis, BCAG's "low" scenario for regional growth for the City of Chico will be used, as it provides a more-conservative threshold for anticipated growth than the higher projections afforded in the General Plan.

#### *Potential Future Housing Development*

The regional growth projections from BCAG also include an analysis of residential development potential. BCAG's housing forecasts for Chico include a "low" compound annual growth rate of 1.17% and a "high" compound annual growth rate of 1.57%. These growth rates project housing between 46,103 (low) and 49,398 (high) for the year 2030.<sup>2</sup> According, the current housing estimates from 2017 (39,064)<sup>3</sup>, and continuing to use the "low" scenario, this would result in a required 7,039 additional dwelling units. This is significantly less than the 16,376 additional dwelling units projected to be needed by the General Plan.

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<sup>1</sup> Butte County Association of Governments (BCAG). 2014. Draft Butte County Long-Term Regional Growth Forecasts 2014-2040. Available at: [http://www.bcag.org/documents/demographics/pop\\_emp\\_projections/Growth\\_Forecasts\\_2014-2040\\_draft.pdf](http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2014-2040_draft.pdf). Accessed August 2016.

<sup>2</sup> Ibid.

<sup>3</sup> City of Chico Housing Snapshot 2017. Available at [http://www.chico.ca.us/housing\\_neighborhood\\_services/housing/documents/2017ChicoHousingSnapshot.pdf](http://www.chico.ca.us/housing_neighborhood_services/housing/documents/2017ChicoHousingSnapshot.pdf). Accessed November 2017

## REGULATORY SETTING

### Federal

There are no federal regulations related to population and housing that apply to the proposed project.

### State

The California Housing Element law (Government Code Section 65588-65589.8) requires that local jurisdictions update their housing elements every five years. It requires the revised Housing Element to be adopted by the local jurisdiction and submitted to the California Department of Housing and Community Development (HCD) to assist the City in ensuring that it meets minimum requirements. State law defining the requirements of the Housing Element is as follows:

*The housing element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, financial resources, quantified objectives, financial resources, and scheduled programs for the preservation, improvement and development of housing. The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, and mobile homes, and shall make adequate provision for the existing and projected needs of all economic segments of the community.<sup>4</sup>*

### Local

*Butte County Association of Governments (BCAG)*

#### Regional Housing Needs Plan (RHNP)

Communities within Butte County utilize the RHNP in land use planning, prioritizing local resource allocation, and in deciding how to address future housing needs resulting from population, employment, and household growth. The RHNP process is a state mandate, devised to address the need for and planning of housing across a range of affordability and in all communities throughout the state. Each jurisdiction within the County is given a share of the anticipated regional housing need. According the RHNP, the City of Chico requires a total of 3,963 housing units from the years 2014-2022. How this total number of housing units is divided among various income groups is shown in Table IV.L-2 below.

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<sup>4</sup> California State Housing Element Law, Accessed at <http://www.hcd.ca.gov/hpd/hrc/plan/he> on March 3, 2005.

**Table IV.L-2  
2014-2022 RHNP  
Housing Unit Need by Income Group**

<b>Income</b>	<b>Number of Units</b>	<b>Percent of Total</b>
<b>Very Low</b>	<b>974</b>	<b>25%</b>
<b>Low</b>	<b>643</b>	<b>16%</b>
<b>Moderate</b>	<b>708</b>	<b>18%</b>
<b>Above Moderate</b>	<b>1,638</b>	<b>41%</b>
<b>Total</b>	<b>3,963</b>	<b>100%</b>
Source: BCAG, 2014-2022 BCAG Regional Housing Needs Plan, December 2012		

### *City of Chico*

#### City of Chico 2030 General Plan

The General Plan Land Use Element and Housing Element govern regulations applicable to population and housing for the proposed project. The City's General Plan Land Use Element describes project housing and job needs for Chico in 2030, and summarizes how the Land Use Designations from the General Plan will accommodate those needs. The Housing Element sets goals for funding, program coordination, and zoning. State law requires that the Housing Element is consistent with the City's General Plan. The Housing Element is updated every five to eight years, and the most recent Housing Element was adopted in June 2014. The current Housing Element directs activities for the planning period of January 2014 through June 2022.

Policy LU-2.1 (Planning for Future Housing and Jobs) - Maintain an adequate land supply to support projected housing and job needs for 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-2.4 (Land Use Compatibility) – Promote land use compatibility through use restrictions, development standards, environmental review and special design considerations.

Policy H.3.2: Strive to maintain adequate opportunity for housing construction to meet future needs.

Policy H.3.3: Promote a mix of dwelling types and sizes and avoid the formation of new residential areas having a uniform housing type and size throughout.



## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on Appendix G, Environmental Checklist Form, of the State *CEQA Guidelines*, the project would have a significant impact on the environment related to population and housing if it would:

- (a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- (b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- (c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

### Population and Housing Issues not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of this Draft EIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

### Project Impacts and Mitigation Measures

*Impact IV.L-1: The proposed project would not directly or indirectly induce substantial population growth in the area by proposing housing or increased employment.*

#### Direct Impacts

##### *New Housing*

It is estimated that the proposed project would increase population by approximately 1,734 people through the addition of the single-family and multi-family units proposed. The project would create 702 units to provide housing for the growing population of the City of Chico. BCAG forecasts that an additional 7,039 dwelling units, low scenario, would be required to sustain growth by 2030. The General Plan also predicted that 16,376 additional dwelling units would be required by 2030. The project would contribute only a portion, approximately 10% of the BCAG prediction and 4.28% of the General Plan projection, of the predicted housing needs. Therefore, growth impacts related to new housing would be less than significant and no mitigation measures are required.

### *New Businesses*

Using a standard commercial employment rate of 1 employee/500 square feet, the proposed project is estimated to create as many as 890 new jobs. New employment opportunities would include fulltime and part-time positions. The California Employment Development Department estimated that there were 6,600 unemployed persons in Butte County as of May 2016. Of this figure, an estimated 2,600 unemployed persons are in Chico. Thus, there is adequate capacity in the local labor market to fill the proposed project's new employment opportunities such that it would be unlikely that substantial growth inducement would occur.

### Indirect Impacts

As provided in greater detail in Section 3. (Project Description) of this Draft EIR, the proposed project would include, expand and utilize existing infrastructure to serve the project. While the proposed project would include, expand and utilize existing infrastructure, infrastructure would not be provided beyond what is called out by the General Plan to accommodate planned growth, or necessary to serve the proposed project. As such, indirect impacts, including the extension of roads or other infrastructure, would not be anticipated to induce substantial population growth in the area that would otherwise not have occurred as rapidly or in as great a magnitude. Therefore, impacts would be less than significant and no mitigation measures are required.

### Overall Population Growth

BCAG forecasts a population increase for the City of Chico of 13,444 people between 2017 and 2030. Implementation of the proposed project would result in the development of 702 single-family and multi-family units with an anticipated permanent population of 1,734 persons. The increase of 1,734 permanent residents anticipated with project development would be well within BCAGs growth projections for the City of Chico. The estimated net population increase associated with the proposed project would represent approximately 12.89% of the forecasted population increase for the City of Chico. Therefore, the proposed project would not induce substantial population growth in the area, either directly or indirectly, that would otherwise not have occurred as rapidly or in as great a magnitude. As such, impacts would be less than significant and no mitigation measures are required.

## **LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Project-specific impacts related to population and housing would be ***less than significant*** and no mitigation measures are required.

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## **IV. ENVIRONMENTAL IMPACT ANALYSIS**

### **M. PUBLIC SERVICES**

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#### **INTRODUCTION**

This section of the DEIR evaluates potential impacts to the project site's geologic environment that may result from implementation of the Stonegate Vesting Subdivision Map and General Plan Amendment/Rezone ("proposed project"). Descriptions and analysis in this section are based on information provided by the Chico Fire Department, Chico Police Department, the City of Chico Public Works Department, and the Chico Unified School District

#### **ENVIRONMENTAL SETTING**

##### **Fire Protection**

Chico Fire-Rescue provides community risk reduction, fire protection, all-risk incident mitigation and emergency medical services to the City of Chico and nearby unincorporated areas of Butte County. The service area is approximately 33 square miles and has a full-time service population of 88,634 persons. The service population increases to approximately 105,000 persons when Chico State University is in session. Chico Fire-Rescue is headquartered at 842 Salem Street, Chico. Overall, the Chico Fire-Rescue operates four fire stations. The Fire Department is staffed by 61 full-time employees, 50 of whom are sworn personnel. The Department maintains 27 pieces of apparatus including 4 engines, 3 reserve engines, one aerial ladder truck, one reserve ladder truck, a medium rescue unit, a type 6 engine, a hazardous materials unit, and a breathing support trailer.

Chico Fire-Rescue responded to 12,373 calls for service in 2014. Of this figure, approximately 76 percent of the calls were for rescues and emergency medical services. Service calls were second at approximately 7 percent, and false alarms were third at approximately 6 percent. The Fire Department's average response time to Code 3 emergency calls was 4 minutes, 13 minutes in 2014.

In the event of major fires or emergencies, Butte Emergency Medical Services provides ambulance services with Butte County. As a standard operating practice, the Chico Fire Department responds to all Code 3 (lights and sirens) emergency medical service calls and typically arrives at the scene before the ambulance 90 percent of the time. The first arriving firefighters assess and stabilize the patient. Often, a firefighter/emergency medical technician will ride to the hospital in the back of the ambulance to assist the paramedics with the patient.

##### **Police Protection**

The Chico Police Department provides police protection to the City of Chico. The Police Department is headquartered at 1460 Humboldt Road, Chico. The Police Department is staffed by 142 full-time employees, of whom 92 are sworn police officers. The Police Department responded

to 89,445 calls for service in 2014. The Police Department's average response time to the highest priority calls (Priority 1) was 3 minutes, 10 seconds in 2014.

### **School Services**

Public Education Services near the project site are provided by the Chico Unified School District ("CUSD"). CUSD provides education for the City of Chico as well as the adjacent unincorporated areas of Butte County. CUSD provides preschool to high school public education to approximately 13,000 students according to the General Plan. Within the CUSD there are three preschools, twelve elementary schools, 3 junior high schools, 4 high schools, a Community Day School, a K-8 Independent Study School and a Special Services School. The closest school to the project site is Castles Preschool, which is approximately 0.36 miles away.

In addition to its existing facilities, CUSD has two undeveloped school sites within the City. CUSD is limited to levying a state-determined maximum fee on residential and commercial development to cover its impact on local schools. The Chico Municipal Code provides authority for the City to require subdivisions to reserve land for elementary school sites for a reasonable period of time, and CUSD is required to provide funds for the reserved sites.

Furthermore, Chico is home California State University ("CSU") Chico and the Chico Campus of Butte College along with other private K-12 and higher education providers. CSU Chico is located on approximately 130 acres adjacent to Downtown and is the second oldest campus in the state university system. CSU Chico adopted a Campus Master Plan in 2005, which envisions accommodating a 2025 enrollment of 17,900 students (full-time equivalents) and is guiding significant upgrades and renovations to campus facilities.

### **Parks**

The City's Parks Division will retain ownership, management, and maintenance responsibility for Bidwell Park, Creekside gateways, and City-owned preserves, while the Chico Area Recreation District ("CARD") will assume ownership and operation of the various other developed parks and recreation systems in the City, such as neighborhood and community parks. According to the General Plan, the total existing recreational facilities in the City includes 37 sites that are parks, natural areas, open space, recreational centers, or undeveloped park space, totaling 4,167 acres.

Table IV.M-1, below, includes the parks and recreational facilities for which the City of Chico maintains responsibility. This list does not include natural areas or undeveloped park space.

**Table IV.M-1  
City of Chico Parks and Recreational Facilities**

<b>Facility</b>	<b>Location</b>	<b>Size (acres)*</b>	<b>Type</b>
Bidwell Park	Northeastern Chico	3,670 acres	Municipal
City Plaza	418 Main Street, Chico	1.90 acres	Plaza
Bidwell Bowl Amphitheater	400 West First Street, Chico	0.3 acres	Amphitheater
Depot Park	431 Cedar Street, Chico	1.5 acres	Neighborhood

Source: City of Chico website. Parks Division. Available at:

[http://www.chico.ca.us/general\\_services\\_department/park\\_division/park\\_reservations.asp](http://www.chico.ca.us/general_services_department/park_division/park_reservations.asp)

California State University Chico. Caper Acres User Study: A Component of the Master Plan for Future Renovation.

[http://www.chico.ca.us/document\\_library/documents/CaperAcresFinalReport4-18-14TOC.pdf](http://www.chico.ca.us/document_library/documents/CaperAcresFinalReport4-18-14TOC.pdf)

\*Size (acres) estimated from Google Earth.

Table IV.M-2, below, includes the parks and recreational facilities for which CARD maintains responsibility. This list does not include natural areas or undeveloped park space.

**Table IV.M-2  
CARD Parks and Recreational Facilities**

<b>Facility</b>	<b>Location</b>	<b>Size (acres)*</b>	<b>Type</b>
Community Park	1900 Martin Luther King Jr. Pkwy, Chico	33.5 acres	Community
DeGarmo Park	199 Leora Court, Chico	18.0 acres	Community
Hooker Oak Park	1928 Manzanita Avenue, Chico	15.0 acres	Community
Wildwood Park	100 Wildwood Park Avenue, Chico	13.5 acres	Community
Oak Way Park	1510 W 8 <sup>th</sup> Avenue, Chico	11.5 acres	Neighborhood
Peterson Park	Denali Dr & Rollins Lake Dr, Chico	4.5 acres	Neighborhood
Rotary Park	199 W 16 <sup>th</sup> Street, Chico	0.4 acres	Neighborhood
Baroni Park	12 Baroni Drive, Chico	3.0 acres	Neighborhood
Hancock Park	Marigold Ave & Middletown Ave, Chico	4.0 acres	Neighborhood
Humboldt Ave. Skate Park	Humboldt Avenue, Chico	0.75 acres	Neighborhood
Pleasant Valley Recreation Center and Pool	2320 North Avenue, Chico	1.0 acre	Recreation Center & Pool
CARD Community Center	545 Vallombrosa Avenue, Chico	1.5 acres	Community Center
Dorthy F. Johnson Center	775 E. 16 <sup>th</sup> Street, Chico	3.0 acres	Community Center & Park
Lakeside Pavilion	2565 California Park Drive, Chico	1.0 acre	Community Center
Sycamore Field	South Park Drive, Chico	3.75 acres	Field(Bidwell Park)
Source: Chico Area Recreation District website. Available at: <a href="http://www.chicorec.com/CARD-Parks--Facilities/index.html">http://www.chicorec.com/CARD-Parks--Facilities/index.html</a>			
*Size (acres) estimated from Google Earth.			

The only City Park located within ¼ mile of the project site is Baroni Park. The Mendocino National Forest Genetic Resource and Conservation Center is located on 209 acres in Chico for the purpose of plant breeding research. This Conservation Center is maintained by the United States Department of Agriculture Forest Service and is located within ¼ mile of the project site, directly south of Skyway.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, public services and utilities impacts resulting from the implementation of the proposed project would be considered significant if the project would:

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:

- a) Fire Protection?
- b) Police Protection?
- c) Schools?
- d) Parks? (Refer to Section IV.N Recreation.)
- e) Other public facilities? (Refer to Section IV.A Impacts Found To Be Less Than Significant)

### Project Impacts

#### *Impact PS-1 Fire Protection:*

The project site is currently served with fire protection services provided by the Chico Fire-Rescue. Chico Fire-Rescue indicated that the increase in calls may negatively impact overall response times and decrease response reliability. However, an increase in calls for service or slightly longer response times would not by themselves be physical impacts on the environment. Moreover, because the entire project site is within one mile from the nearest fire station (Station 4), it would not directly result in a need for new or expanded fire protection facilities. Funding for additional fire personal that may be required would be provided through impact fees and property taxes. Additionally, Chico Fire-Rescue requires all fixed 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. All structures shall comply with the provisions of the California Building Standards including California Fire Code—a standard requirement of all new construction. For these reasons, the proposed project would not create a need to construct new or expand existing fire protection facilities. Impacts would be **less than significant**.

*Impact PS-2 Police Protection:*

The project site is currently served with police protection services provided by the Chico Police Department. Police services go through an annual budgeting process during which citywide priorities are established and service level monitored. The increased demand for police service that would result from the introduction of housing and commercial uses proposed for the site would require the addition of approximately two additional officers to maintain the current staffing rate of approximately 1 officer/1,000 residents. The project would not require the construction of a new station or result in a significant increased demand for police services. Funding for additional law enforcement services would be provided through impact fees and property taxes, therefore, impacts would be less-than-significant.

*Impact PS-3 School Services:*

Implementation of the proposed project would result in the development of 733 residential units. Student yield factors are set by the California State Allocation Board Office of Public School Construction. To calculate project impacts on the CUSD, the statewide average student yield factor per dwelling unit may be expressed as 0.43 elementary school student and 0.14 middle school student, and 0.13 high school student. By conservatively applying the statewide average student yield factor, the 733 residential units associated with the project could generate approximately 513 new students divided as approximately 315 elementary school students, 102 middle school students, and 95 high school students. As the General Plan mentions two schools already planned, it does not appear that the number of students in the proposed project would create a need for new school facilities to be constructed. The project applicant would be required to pay developer fees to offset any impacts the project would have on the school districts serving the site. Under California Government Code Section 65996, these fees are “the exclusive methods of considering and mitigating impacts on school facilities that occur or might occur as a result of any legislative or adjudicative act, or both, by any state or local agency involving, but not limited to, the planning, use, or development of real property or any change of governmental organization or reorganization”. Therefore, payment of the required developer fees would ensure that the proposed project’s impacts on school services would be less than significant. Because no significant impacts on school services have been identified, no mitigation measures are required.

**LEVEL OF IMPACT AFTER MITIGATION**

All project impacts related to public services are ***less-than-significant***. No mitigation is required.



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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### N. RECREATION

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#### INTRODUCTION

This section discusses the existing recreational resources in the vicinity of the project site and evaluates the potential impacts of the proposed project on recreational resources. This section evaluates impacts related to physical deterioration of recreational facilities and impacts from the need for construction or expansion of recreational facilities.

#### ENVIRONMENTAL SETTING

The City's Parks Division will retain ownership, management, and maintenance responsibility for Bidwell Park, Creekside gateways, and City-owned preserves, while the Chico Area Recreation District ("CARD") will assume ownership and operation of the various other developed parks and recreation systems in the City, such as neighborhood and community parks. According to the General Plan, the total existing recreational facilities in the City includes 37 sites that are parks, natural areas, open space, recreational centers, or undeveloped park space, totaling 4,167 acres.

##### City of Chico

Table IV.N-1, below, includes the parks and recreational facilities for which the City of Chico maintains responsibility. This list does not include natural areas or undeveloped park space.

**Table IV.N-1**  
**City of Chico Parks and Recreational Facilities**

<b>Facility</b>	<b>Location</b>	<b>Size (acres)*</b>	<b>Type</b>
Bidwell Park	Northeastern Chico	3,670 acres	Municipal
City Plaza	418 Main Street, Chico	1.90 acres	Plaza
Bidwell Bowl Amphitheater	400 West First Street, Chico	0.3 acres	Amphitheater
Depot Park	431 Cedar Street, Chico	1.5 acres	Neighborhood

Source: City of Chico website. Parks Division. Available at:

[http://www.chico.ca.us/general\\_services\\_department/park\\_division/park\\_reservations.asp](http://www.chico.ca.us/general_services_department/park_division/park_reservations.asp)

California State University Chico. Caper Acres User Study: A Component of the Master Plan for Future Renovation.

[http://www.chico.ca.us/document\\_library/documents/CaperAcresFinalReport4-18-14TOC.pdf](http://www.chico.ca.us/document_library/documents/CaperAcresFinalReport4-18-14TOC.pdf)

\*Size (acres) estimated from Google Earth.

## Chico Area Recreation District

Table IV.N-2, below, includes the parks and recreational facilities for which CARD maintains responsibility. This list does not include natural areas or undeveloped park space.

**Table IV.N-2**  
**CARD Parks and Recreational Facilities**

<b>Facility</b>	<b>Location</b>	<b>Size (acres)*</b>	<b>Type</b>
Community Park	1900 Martin Luther King Jr. Pkwy, Chico	33.5 acres	Community
DeGarmo Park	199 Leora Court, Chico	18.0 acres	Community
Hooker Oak Park	1928 Manzanita Avenue, Chico	15.0 acres	Community
Wildwood Park	100 Wildwood Park Avenue, Chico	13.5 acres	Community
Oak Way Park	1510 W 8 <sup>th</sup> Avenue, Chico	11.5 acres	Neighborhood
Peterson Park	Denali Dr & Rollins Lake Dr, Chico	4.5 acres	Neighborhood
Rotary Park	199 W 16 <sup>th</sup> Street, Chico	0.4 acres	Neighborhood
Baroni Park	12 Baroni Drive, Chico	3.0 acres	Neighborhood
Hancock Park	Marigold Ave & Middletown Ave, Chico	4.0 acres	Neighborhood
Humboldt Ave. Skate Park	Humboldt Avenue, Chico	0.75 acres	Neighborhood
Pleasant Valley Recreation Center and Pool	2320 North Avenue, Chico	1.0 acre	Recreation Center & Pool
CARD Community Center	545 Vallombrosa Avenue, Chico	1.5 acres	Community Center
Dorothy F. Johnson Center	775 E. 16 <sup>th</sup> Street, Chico	3.0 acres	Community Center & Park
Lakeside Pavilion	2565 California Park Drive, Chico	1.0 acre	Community Center
Sycamore Field	South Park Drive, Chico	3.75 acres	Field(Bidwell Park)

Source: Chico Area Recreation District website. Available at: <http://www.chicorec.com/CARD-Parks--Facilities/index.html>

\*Size (acres) estimated from Google Earth.

The only City Park located within ¼ mile of the project site is Baroni Park. The Mendocino National Forest Genetic Resource and Conservation Center is located on 209 acres in Chico for the purpose of plant breeding research. This Conservation Center is maintained by the United States Department of Agriculture Forest Service and is located within ¼ mile of the project site, directly south of Skyway.

## REGULATORY SETTING

### State Regulations

#### *Quimby Act*

The goal of the 1975 Quimby Act (California Government Code Section 66477) was to require developers to help mitigate the impacts of property improvements by requiring them to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act gave authority for passage of land dedication ordinances only to cities and counties, thus requiring special districts to work with cities and/or counties to receive parkland dedication and/or in-lieu fees. The fees must be paid and land conveyed directly to the local public agencies that provide parks and recreation services community-wide. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities (Westrup, 2002).

Originally, the Quimby Act was designed to ensure “adequate” open space acreage in jurisdictions adopting Quimby Act standards (e.g., 3 to 5 acres per 1,000 residents). In some California communities the acreage fee was very high where property values were high, and many local governments did not differentiate on their Quimby fees between infill projects and green belt developments. In 1982, the Quimby Act was substantially amended via AB 1600. The amendments further defined acceptable uses of or restrictions on Quimby funds, provided acreage/population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied (nexus) to a project’s impacts as identified through traffic studies required by CEQA. In other words, AB 1600 requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or parkland and the type of development project upon which the fee is imposed (Westrup, 2002). Cities or counties with a high ratio of parkland to inhabitants can set a standard of 5 acres per 1,000 residents for new development. Cities or counties with a lower ratio can only require the provision of up to 3 acres of parkland per 1,000 residents. The calculation of a city’s or county’s parkland-to-population ratio is based on a comparison of the population count of the last federal census to the amount of city- or county-owned parkland.

### Local Regulations

#### *CARD Park and Recreation Master Plan (PRMP)*

The PRMP, adopted in 2008, provides a comprehensive evaluation of existing parks and recreational resources; identifies and describes resource types and facilities; identified current deficiencies and demands; and establishes park standards.

**Goal 1 – Provide a wide range of recreation and leisure opportunities for all residents of the Chico Area Recreation and Park District.**

Provide 1.5 acres of neighborhood parklands and 2.5 acres of community parklands for every 1,000 residents.

**Future Needs**

To accommodate the population buildout projects from the 2030 General Plan, there will be a need for one or two additional community parks, and seven to 14 additional neighborhood parks.

*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 recreational facilities are included below. For discussion of project consistency with additional applicable land use policies please refer to Section IV.J Land Use and Planning of this Draft EIR.

**Park Standards**

The 2030 General Plan directs use of CARD's PRMP parkland standards for future neighborhood and community parks. In addition, the City's existing standard of 2.5 acres of greenways per 1,000 residents is being maintained.

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.

Policy PPFS-2.1 (Use of Creeks and Greenways) – Utilize the City's creeks, greenways, and other open space for public access, habitat protection, and to enhance community connectivity.

Policy OS-2.1 (Planning and Managing Open Space) – Continue acquisition and management of open space to protect habitat and promote public access.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on the Appendix G of the State *CEQA Guidelines*, a project could have a significant impact on recreational resources if it would cause any of the following conditions to occur:

- a) 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 accelerate; or
- b) include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

### Project Impacts and Mitigation Measures

#### *Impact REC-1: Impacts to Existing Parks and Recreational Facilities*

Based on the preferred parkland to population ratio established in the PRMP of 1.5 acres of neighborhood parks and 2.5 acres of community parks per every 1,000 residents, the anticipated 1,734 new residents<sup>1</sup> of the proposed project would generate a demand for 2.9 acres of new neighborhood parkland and 4.8 acres of community parkland. The proposed project includes the creation of 3.3 acres of neighborhood parkland to be provided for new residents, fulfilling level of service goals for neighborhood-serving parks.

With regard to community parks, the Chico General Plan acknowledges that the City is currently underserved in terms of meeting the standard contained in the PRMP, and notes that one or two additional community parks will be needed to accommodate the anticipated service area population by the year 2030. The General Plan identifies a large “Special Planning Area” located immediately east of the Stonegate project site and states that future planning for that Special Planning Area will include a community park. There have also been past discussions about developing a new community park (possibly including an aquatic center) on City-owned property located at the southwest corner of Humboldt Road and Notre Dame Boulevard, approximately one mile northwesterly of the Stonegate site. In either case, future development of a community park in the Southeast Chico area would be funded with development impact fees for parks that the City collects in conjunction with building permits for new residential units. Impact fees assessed for parks are based on estimates of future development of park sites, including the associated environmental review. The development impact fee program is currently (early 2018) being addressed by the Chico City Council and updated to ensure that adequate fees amounts are collected for these future community-serving projects.

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<sup>1</sup> United States Census Bureau. *Average Persons Per Household for the City of Chico: 2.47 persons.* Available at: <http://www.census.gov/quickfacts/table/PST045215/00>.  
 $2.47 \text{ persons per unit} \times 702 \text{ units} = 1,734 \text{ persons}.$

Payment of development impact fees, including park fees, will be required in conjunction with building permits for new development within the Stonegate project. The park fees collected will subsequently be used for the development of new community parks.

Until such time that another community park is developed in the Southeast Chico area, community-level recreational opportunities exist at the Mendocino National Forest Genetic Resource and Conservation Center, a non-city park resource, and within Bidwell Park, a 4,167-acre regional park located within City limits.

Therefore, the proposed project would add to an existing need for development of a community park in the area, and would be required to pay its fair share as development occurs toward the anticipated costs of acquisition and development of the new park.

Since the project includes sufficient neighborhood parkland to serve its future residents and will pay its fair share toward development of additional community parkland, this impact is **less than significant**.

*Impact REC-2: Impacts Resulting from Construction or Expansion of Parks and Recreational Facilities*

The requirements of the Quimby Act are met through the incorporation of Bidwell Park. Utilizing the total 4,167 acreage of recreational facilities within the City and the population projections used in this analysis (see Section IV.L Population and Housing) of 92,464 people, there is currently 45 acres of parkland per 1,000 residents. This amount of parkland far exceeds the requirements of the Quimby Act. Therefore, no parkland would be required to be constructed or expanded for compliance with the Quimby Act.

As stated above the General Plan identifies the City as currently deficient with respect to community parks. The project would be required to pay development impact fees for park facilities to the city to fund the acquisition and development of a new community park. Therefore, this impact is **less than significant**.

## **LEVEL OF SIGNIFICANCE AFTER MITIGATION**

All project impacts related to recreation are ***less-than-significant***. No mitigation is required.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### O. TRANSPORTATION AND TRAFFIC

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#### INTRODUCTION

This chapter analyzes the potential transportation impacts of the proposed project under Existing and Cumulative conditions. Where significant impacts are identified, mitigation measures are recommended to lessen their significance.

##### **Project Description**

For purposes of this EIR, the project is analyzed based on the following trip generating land uses:

- 469 single family residential homes
- 233 multi-family residential dwelling units
- 240,000 square feet of commercial
- 205,000 square feet of medical/dental office
- 3.3 acres of park
- 108 acres of open space

The project also includes the following roadway network modifications:

- Extension of Laredo Way from Niagara Way to Bruce Road
- Extension of Webster Drive to Bruce Road
- Bruce Road widening from two to four travel lanes with adequate turning lanes and Class II bike lanes (Webster Drive to E 20th Street)
- Two-lane roundabout at E 20th Street / Bruce Road intersection
- Traffic signal at Bruce Road / Webster Drive intersection with adequate turning lanes

## ENVIRONMENTAL SETTING

This section describes the existing environmental setting, which is the baseline scenario which project-specific impacts are evaluated. The existing transportation 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 based on collaboration between the City of Chico 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 IV.O-1 shows the study area, project site, and 19 study intersections selected for analysis.

Table IV.O-1 lists the study intersections. All study intersections are operated and maintained by the City of Chico, except for intersections 1, 2, 3, 14, and 15 which are operated and maintained by Caltrans, and intersection 19 which does not exist today. The study area also includes bicycle, pedestrian, and transit facilities in the project vicinity.

### Roadway Network

A network of local roadways and freeway facilities form the roadway system within the study area. The following key roadways within this system would serve trips associated with the proposed project. Posted speed limits and number of travel lanes for these key roadways and freeways are shown in Figure IV.O-2.



**Table IV.O-1  
Study Intersections**

<b>Intersection</b>	<b>Jurisdiction</b>
1. State Route 32 / Bruce Road	Caltrans
2. E 20th Street / State Route 99 Southbound Ramps	Caltrans
3. E 20th Street / State Route 99 Northbound Ramps	Caltrans
4. E 20th Street / Chico Mall	City of Chico
5. E 20th Street / Forest Avenue	City of Chico
6. E 20th Street / Huntington Drive	City of Chico
7. E 20th Street / Notre Dame Boulevard	City of Chico
8. E 20th Street / Bruce Road	City of Chico
9. Notre Dame Boulevard / Parkhurst St	City of Chico
10. Notre Dame Boulevard / Jasper Drive	City of Chico
11. Notre Dame Boulevard / Webster Drive	City of Chico
12. Notre Dame Boulevard / Forest Avenue	City of Chico
13. Bruce Road / Raley Boulevard	City of Chico
14. Skyway Road / State Route 99 Southbound Ramps	Caltrans
15. Skyway Road / State Route 99 Northbound Ramps	Caltrans
16. Skyway Road / Notre Dame Boulevard	City of Chico
17. Skyway Road / Forest Avenue	City of Chico
18. Skyway Road / Bruce Road	City of Chico
19. Bruce Road / Webster Drive <sup>1</sup>	City of Chico
Notes:	
<sup>1</sup> Intersection 19 is not an existing intersection; only analyzed under Existing Plus Project and Cumulative Plus Project.	

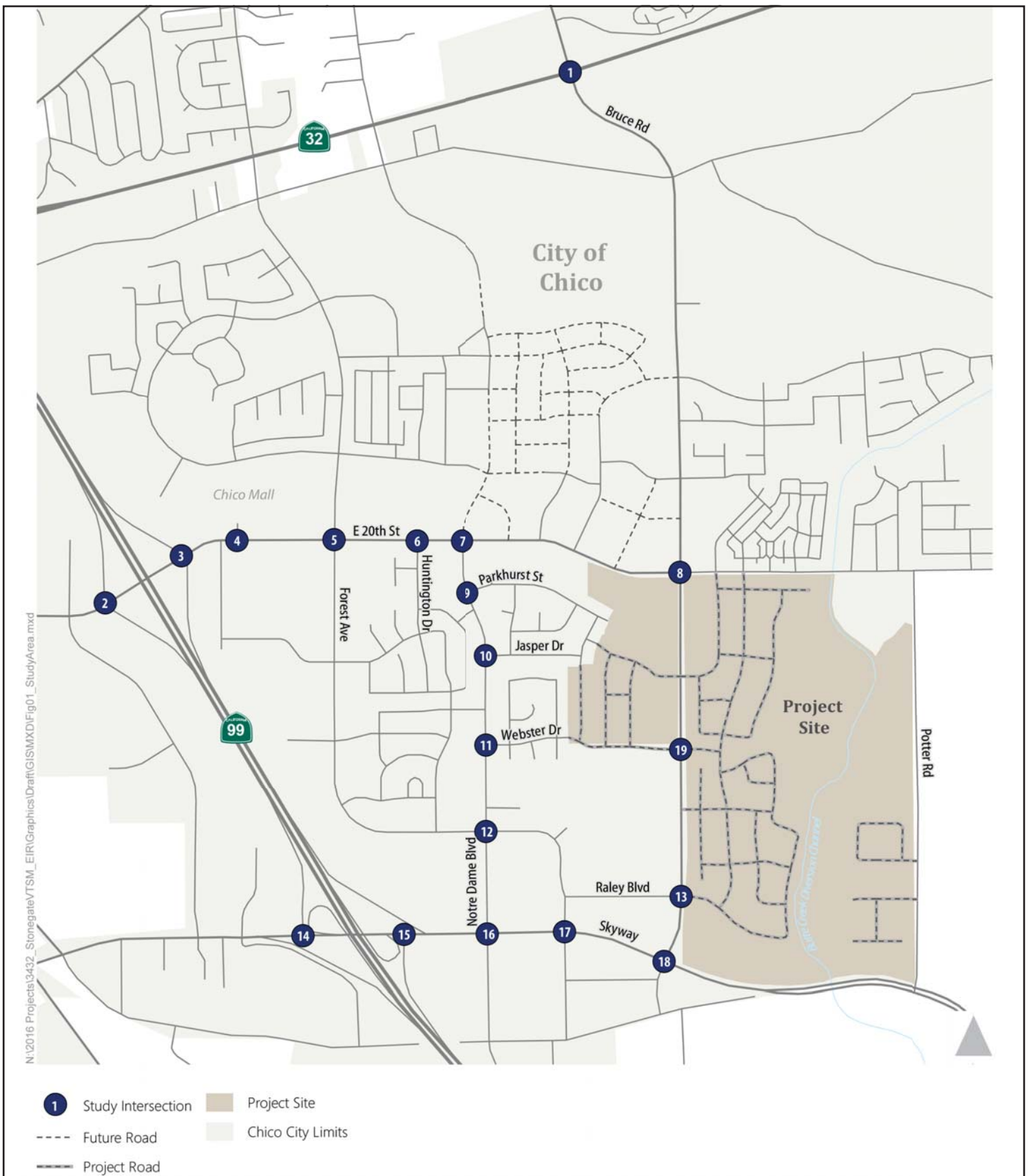


Figure IV.O-1 Study Area

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers



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 20<sup>th</sup> Street and Skyway. It becomes three lanes wide (two northbound lanes) between E 20th Street and Picholine Way, and it is four lanes wide through some of the residential areas north of SR 32.

East 20th Street (E 20<sup>th</sup> Street) is a major east-west arterial that begins to the west at Park Avenue, and continues east through SR 99 interchange to Bruce Road, where the roadway continues as collector through residential development. With the exception of the easternmost ½ mile of roadway near Bruce Road, 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.

Skyway is a generally 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 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.

Forest Avenue is a primarily north-south arterial connecting residential neighborhoods north of E 20th Street and SR 32 to commercial areas such as Chico Mall and Skypark Plaza. At its northern terminus, Forest Avenue starts at E 8th Street as a two-lane road that widens to four lanes south of SR 32. Between Humboldt Avenue and Notre Dame Boulevard, Forest Avenue is a four-lane facility with raised medians and a typical posted speed limit of 35 mph. After Notre Dame Boulevard, it becomes a two-lane collector, transitioning to Zanella Way south of Skyway.

Notre Dame Boulevard is a north-south arterial through residential neighborhoods. It begins south of Skyway and currently terminates at E 20<sup>th</sup> Street, with intermittent sections between E 20<sup>th</sup> Street and Humboldt Road to the north, where it 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 and 35 mph.

Parkhurst Street is an east-west local road with fronting residential that connects to Notre Dame Boulevard. The street currently terminates to the east at Niagara Way at the boundary of the proposed project.

Jasper Drive is an east-west local road with fronting residential that connects to Notre Dame Boulevard at its western terminus. The street terminates to the east at Niagara Way.

Webster Drive is an east-west local road with fronting residential that connects to Notre Dame Boulevard. The street currently terminates at New Dawn Circle to the east at the boundary of the proposed project.

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 of Chico to Orland to the west and into the Sierra Nevada to the east. In the study area, SR 32 is a two-lane arterial with a posted speed limit of 55 mph.

State Route 99 (SR 99) is a California state highway connecting the City of Chico 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 and North Natomas. Within the study area, SR 99 is a four lane freeway facility that connects to the City of Chico roadway network via interchanges at Skyway and at E 20th Street.

### **Traffic Data Collection**

Traffic counts were collected at the study intersections and freeway mainline in October 2015 and May 2016 during the weekday AM (7-9) and PM (4-6) peak periods. During all counts, weather conditions were generally dry, no unusual traffic patterns were observed, and the Chico Unified School District was in full session.

### **Study Periods**

Based on the traffic data collections, the AM peak hour within the study area intersections occurred from 7:30 to 8:30, and the PM peak hour occurred from 4:30 to 5:30. For the freeway mainline, the AM peak hour occurred from 7:15 to 8:15, and the PM peak hour occurred from 4:30 to 5:30.

### **Roadway System**

Traffic operations at all study intersections were analyzed under weekday AM and PM peak hour conditions using the procedures and methodologies contained in the *Highway Capacity Manual* (Transportation Research Board, 2010) for calculating delay at intersections. These methodologies were applied using Synchro traffic operations analysis software.

#### *Intersection Level of Service Definitions*

Each study intersection was analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. Table IV.O-2 displays the delay range associated with each LOS category for signalized and unsignalized intersections.

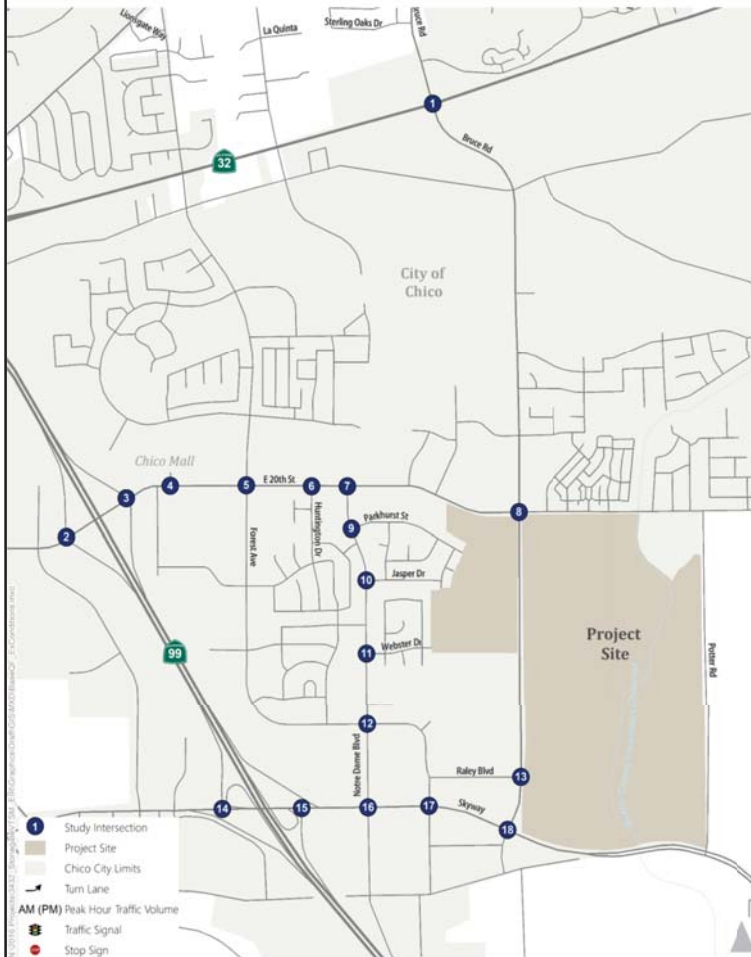
**Table IV.O-2  
Intersection Level of Service Definitions**

Level of Service	Description (for Signalized Intersections)	Average Delay (Seconds/Vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0
<p>Note: LOS = level of service; V/C ratio= volume-to-capacity ratio          LOS at signalized intersections and roundabouts based on average delay for all vehicles. LOS at unsignalized intersections is reported for entire intersection and for minor street movement with greatest delay.          Source: Highway Capacity Manual (Transportation Research Board, 2010)</p>			

### *Existing Intersection Traffic Volumes*

Figure IV.O-3 displays the existing AM and PM peak hour intersection traffic volumes, traffic controls, and lane configurations.





<b>1. Bruce Rd/SR 32</b> 	<b>2. SR 99 SB Ramps/E 20th St</b> 	<b>3. SR 99 NB Ramps/E 20th St</b> 	<b>4. Chico Mall/E 20th St</b> 	<b>5. Forest Ave/E 20th St</b> 
<b>6. Huntington Dr/E 20th St</b> 	<b>7. Notre Dame Blvd/E 20th St</b> 	<b>8. Bruce Rd/E 20th St</b> 	<b>9. Notre Dame Blvd/Parkhurst St</b> 	<b>10. Notre Dame Blvd/Jasper Dr</b> 
<b>11. Notre Dame Blvd/Webster Dr</b> 	<b>12. Notre Dame Blvd/Forest Ave</b> 	<b>13. Bruce Rd/Raley Blvd</b> 	<b>14. SR 99 SB Ramps/Skyway</b> 	<b>15. SR 99 NB Ramps/Skyway</b> 
<b>16. Notre Dame Blvd/Skyway</b> 	<b>17. Forest Ave/Skyway</b> 	<b>18. Bruce Rd/Skyway</b> 		

Figure IV.O-3 Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

*Existing Intersection Operations*

Table IV.O-3 shows the existing peak hour intersection operations at the study intersections.

**Table IV.O-3  
Intersection Operations – Existing Conditions**

Intersection	Traffic Control	Peak Hour	Existing Conditions	
			Delay <sup>1</sup>	LOS
1. SR 32 / Bruce Rd.	Signalized	AM PM	30 24	C C
2. E 20th St. / SR 99 SB Ramps	Signalized	AM PM	9 17	A B
3. E 20th St. / SR 99 NB Ramps	Signalized	AM PM	8 14	A B
4. E 20th St. / Chico Mall	Signalized	AM PM	12 21	B C
5. E 20th St. / Forest Ave.	Signalized	AM PM	29 46	C D
6. E 20th St. / Huntington Drive	Signalized	AM PM	7 8	A A
7. E 20th St. / Notre Dame Blvd.	SSSC	AM PM	6 (29) 8 (39)	A (D) A (E)
8. E 20th St. / Bruce Rd.	Signalized	AM PM	19 20	B C
9. Notre Dame Blvd. / Parkhurst St.	SSSC	AM PM	1 (10) 1 (10)	A (A) A (B)
10. Notre Dame Blvd. / Jasper Drive	SSSC	AM PM	1 (10) 0 (10)	A (A) A (B)
11. Notre Dame Blvd. / Webster Drive	SSSC	AM PM	2 (10) 1 (11)	A (B) A (B)
12. Notre Dame Blvd. / Forest Ave.	Signalized	AM PM	13 14	B B
13. Bruce Rd. / Raley Blvd.	SSSC	AM PM	2 (19) 9 (37)	A (C) A (E)
14. Skyway / SR 99 SB Ramps	Signalized	AM PM	11 14	B B
15. Skyway / SR 99 NB Ramps	Signalized	AM PM	6 11	A B
16. Skyway / Notre Dame Blvd.	Signalized	AM PM	23 30	C C
17. Skyway / Forest Ave.	SSSC	AM PM	3 (>200) 15 (>200)	A (F) C (F)
18. Skyway / Bruce Rd.	Signalized	AM PM	17 21	B C

Notes: LOS = Level of Service. SSSC = Side-Street Stop-Controlled

<sup>1</sup>For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For SSSC intersections, the LOS and control delay for the worst movement is shown in parentheses next to the average intersection LOS and delay. Impacts to intersections are determined based on the overall LOS and average delay. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010).

Source: Fehr & Peers, 2017



As shown, all intersections operate at LOS C or better during both AM and PM peak hours, except for Intersection 5 – E 20<sup>th</sup> Street / Forest Avenue which operates at LOS D during the PM peak hour. The minor street worst movement delay for Intersection 7 and 13 currently operate at LOS E during the PM peak hour, and the worst movement for Intersection 17 operates at LOS F during both the AM and PM peak hours. However, the overall delay at intersections 7, 13, and 17 is LOS C or better.

#### *Freeway Level of Service Definitions*

Per Caltrans standards, freeway segment operations were evaluated using methodologies from the *Highway Capacity Manual* (Transportation Research Board, 2010). The LOS for a basic freeway segment is based on the vehicle density (passenger cars/lane/mile) as shown in Table IV.O-4. Freeway merge segments are those where two traffic streams combine into one single stream, while freeway diverge segments are those where one traffic stream separates into two separate streams. The performance LOS for merge and diverge sections is computed in one of two ways. If both the ramp and the adjacent freeway mainline segment are under capacity, then LOS is based on the density of the ramp junction. If either the ramp or the adjacent freeway mainline segment have reached (or exceed) capacity, then the merge/diverge segment is considered to operate at LOS F regardless of the computed ramp junction density. The LOS for ramp junctions is based on the vehicle density (passenger cars/lane/mile) as shown in Table IV.O-4.

The performance of freeway ramp weaving segments under future conditions was analyzed using the Leisch methodology as defined in the *Highway Capacity Manual* (Transportation Research Board, 2010).

**Table IV.O-4  
Freeway Level of Service Definitions**

<b>Level of Service</b>	<b>Mainline (Density)<sup>1</sup></b>	<b>Ramp Junctions (Density)<sup>1</sup></b>
A	< 11	< 10
B	> 11 to 18	> 10 to 20
C	> 18 to 26	> 20 to 28
D	> 26 to 35	> 28 to 35
E	> 35 to 45	> 35
F	> 45 or Demand exceeds capacity <sup>2</sup>	Demand exceeds capacity <sup>2</sup>
Notes: <sup>1</sup> Density expressed in passenger car equivalents per hour per mile per lane. <sup>2</sup> Occurs when freeway demand exceeds upstream (diverge) or downstream (merge) freeway segment capacity, or if off-ramp demand exceeds off-ramp capacity. Source: Highway Capacity Manual (Transportation Research Board, 2010)		

### *Existing Freeway Volumes*

Figure IV.O-4 displays the existing AM and PM peak hour freeway volumes.

### *Existing Freeway Operations*

Table IV.O-5 displays the existing freeway operations under the AM and PM peak hours.



Figure IV.O-4 Existing Freeway Volumes

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

**Table IV.O-5  
Freeway Operations – Existing Conditions**

Freeway	Segment	Type	Peak Hour	Existing Conditions	
				Density <sup>1</sup>	LOS
State Route 99 Northbound	South of Skyway	Basic	AM PM	13.8 17.4	B B
	Skyway Off-Ramp	Diverge	AM PM	18.8 22.8	B C
	Skyway	Basic	AM PM	10.5 13.4	A B
	Skyway Loop On-Ramp	Merge	AM PM	16.8 21.8	B C
	Skyway Slip On-Ramp	Merge	AM PM	25.7 29.9	C D
	Skyway to E 20th Street	Basic	AM PM	23.1 27.1	C D
	E 20th Street Off-Ramp	Diverge	AM PM	29.1 31.8	D D
	E 20th St	Basic	AM PM	21.6 22.8	C C
	E 20th Street On-Ramp	Merge	AM PM	30.9 36.3	D E
	North of E 20th Street	Basic	AM PM	27.3 37.7	D E
State Route 99 Southbound	North of E 20th Street	Basic	AM PM	38.2 37.0	E E
	E 20th Street Off-Ramp	Diverge	AM PM	40.6 39.9	E E
	E 20th Street	Basic	AM PM	26.7 20.4	D C
	E 20th Street On-Ramp	Merge	AM PM	31.5 25.7	D C
	E 20th Street to Skyway	Basic	AM PM	29.5 23.0	D C
	Skyway Off-Ramp	Diverge	AM PM	35.3 29.3	E D
	Skyway	Basic	AM PM	15.8 11.9	B B
	Skyway Loop On-Ramp	Merge	AM PM	20.7 16.9	C B
	Skyway On-Ramp	Merge	AM PM	22.1 19.1	C B
	South of Skyway	Basic	AM PM	19.0 16.2	C B
Notes: <sup>1</sup> Density expressed in passenger car equivalents per hour per mile per lane. Source: Fehr & Peers, 2017					

As shown, all freeway mainline, merge, and diverge segments operate at LOS E or better during the AM and PM peak hours.

#### *Existing Off-Ramp Queues*

Freeway off-ramp queueing was analyzed using the procedures and methodologies contained in the *Highway Capacity Manual* (Transportation Research Board, 2010). These methodologies were applied using the SimTraffic microsimulation software program. Reported results are based on an average of 10 runs. Table IV.O-6 displays the existing freeway off-ramp queueing within the study area during the AM and PM peak hours. As shown, all study freeway off-ramp queues remain within the available storage area during both peak hours.

**Table IV.O-6  
Freeway Off-Ramp Queueing – Existing Conditions**

Facility	Storage Length (feet)	Peak Hour	Existing Conditions
			Queue (feet)
SR 99 Southbound Off-Ramp at E. 20th St	1,350	AM PM	175 300
SR 99 Northbound Off-Ramp at E. 20th St	1,350	AM PM	125 175
SR 99 Southbound Off-Ramp at Skyway Rd	1,500	AM PM	250 275
SR 99 Northbound Off-Ramp at Skyway Rd	1,275	AM PM	150 200
Notes: Maximum queue is calculated using an average of 10 SimTraffic runs. Storage length is measured using aerial imagery. Source: Fehr & Peers, 2017			

## 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 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 is currently served by a variety of bicycle facilities, as depicted in Figure IV.O-5. Class II bike lanes exist on Bruce Road immediately north of the project site, on E 20<sup>th</sup> Street, and on Skyway west of Bruce. The project proposes to include bike lanes on Bruce Road through the project site from E 20<sup>th</sup> Street to Skyway. Nearby Class II bike lanes exist on Notre Dame Boulevard, and Class I paths along Potter Road to the east and Chico Bike Path off of Bruce Road to the north, providing connectivity between the project site and destinations throughout Chico.

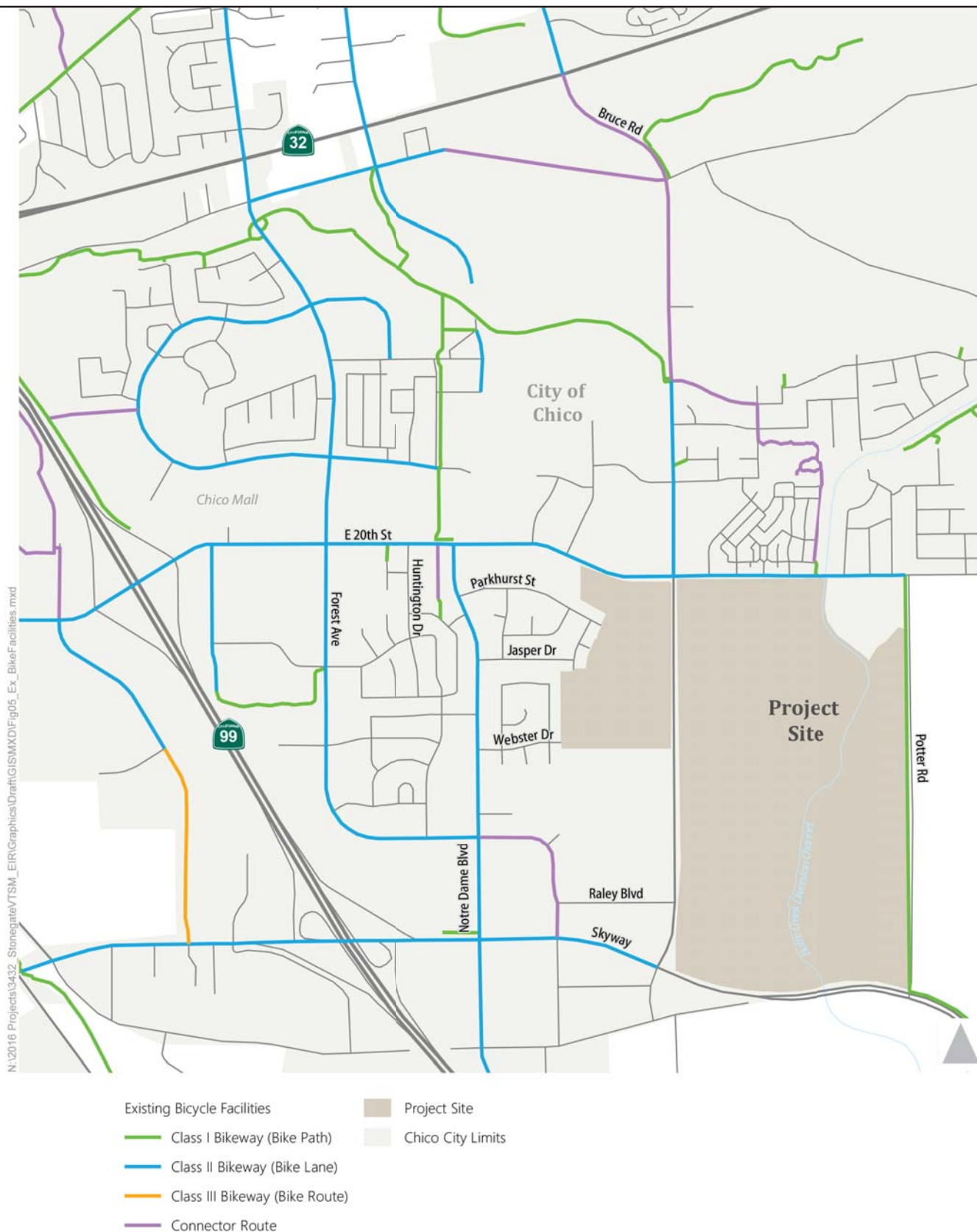


Figure 5

Figure IV.O-5 Existing Bicycle Facilities

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

## Pedestrian System

Crosswalks are present at local signalized intersections in the study area. Sidewalks are present along E 20<sup>th</sup> Street west of Notre Dame Boulevard, and are intermittent to Bruce Road. Sidewalks do not exist along Bruce Road from E 20<sup>th</sup> Street to Raley Boulevard. Figure IV.O-6 displays the existing pedestrian facilities and areas of missing sidewalks along key roadways within the study area.

## Transit System

Local Butte Regional Transit (B-Line) provides bus service in Chico and throughout Butte County. Figure IV.O-6 displays the existing transit routes and stops in the study area.

Seven B-Line routes serve nearby bus stops at E 20<sup>th</sup> Street / Bruce Road, Skyway / Bruce Road, and Notre Dame Boulevard / Forest Ave. Table IV.O-7 summarizes the existing transit service near the project site.

**Table IV.O-7**  
**Existing Transit Service Schedule Summary**

Route	Weekday		Saturday		Sunday	
	Freq. (min)	Span	Freq. (min)	Span	Freq. (min)	Span
5 (E. 8 <sup>th</sup> Street)	30 – 60	7 AM – 8 PM	60	8 AM – 7 PM	-	-
7 (Bruce / Manzanita)	30 – 180	7 AM – 5 PM	-	-	-	-
14 (Park / Forest / MLK)	30 – 60	6 AM – 10 PM	60	8 AM – 7 PM	-	-
17 (Park / MLK / Forest)	60	7 AM – 6 PM	60	8 AM – 6 PM	-	-
20 (Chico – Oroville)	60	6 AM – 8 PM	120	8 AM – 6 PM	120	8 AM – 6 PM
40 (Paradise – Chico)	60 – 120	7 AM – 7 PM	120	8 AM – 7 PM	120	10 AM – 6 PM
41 (Paradise Pines – Chico)	60 – 120	6 AM – 7 PM	180	10 AM – 6 PM	-	-
Notes: Where applicable, service frequency is provided for peak/off peak time periods						
Source: Butte Regional Transit, 2017						



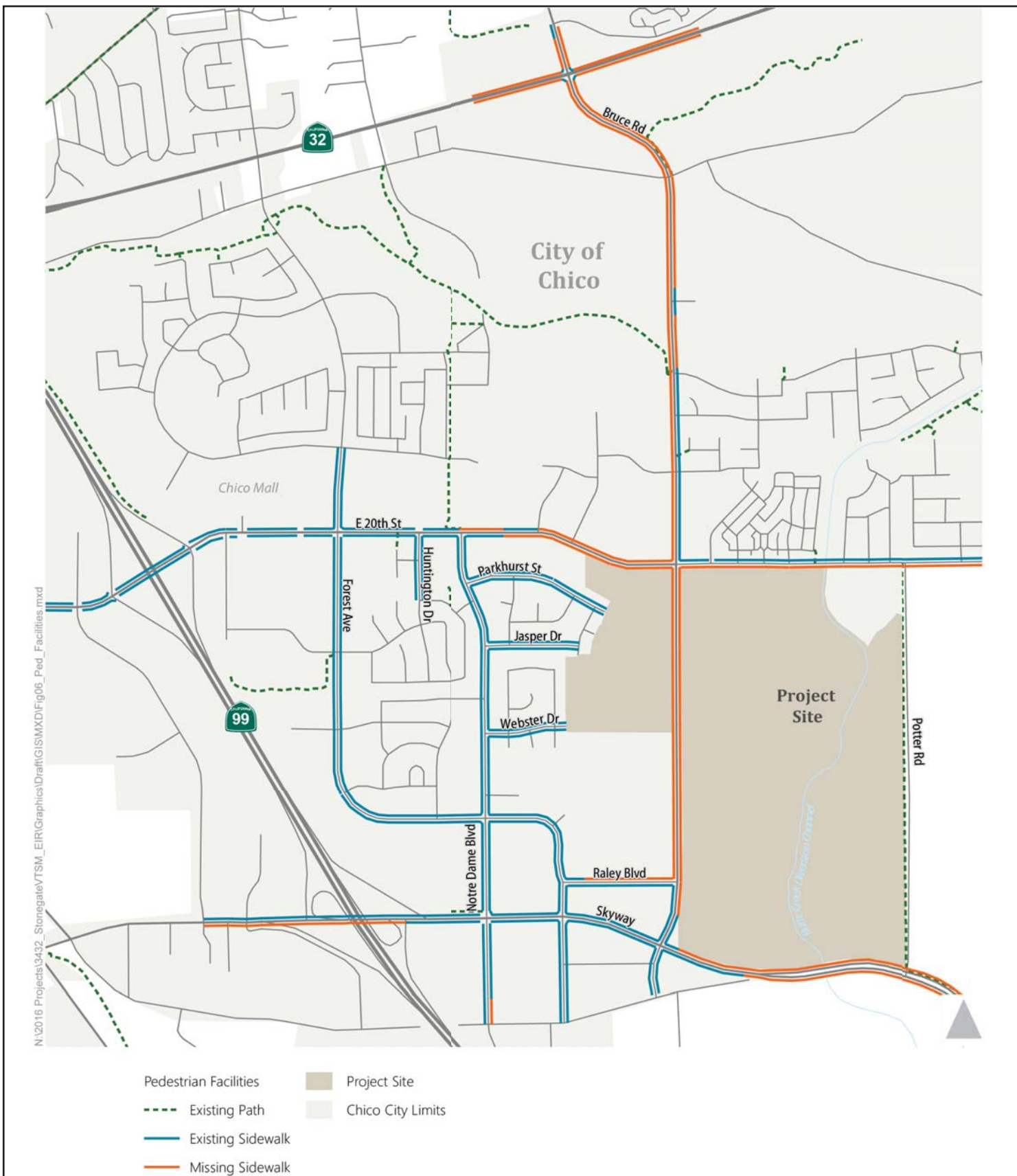


Figure IV.O-6 Existing Pedestrian Facilities

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

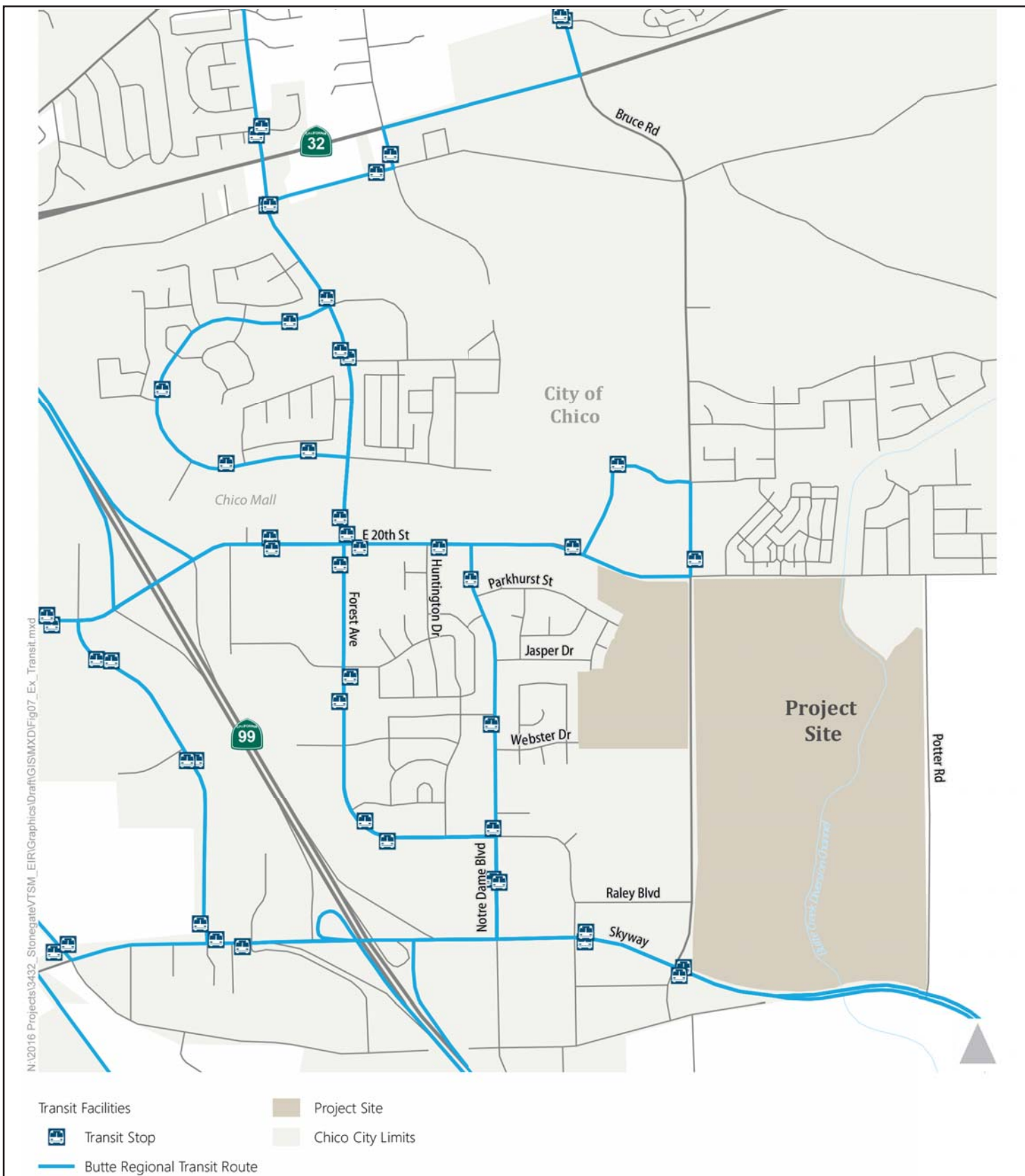


Figure IV.O-7 Existing Transit Facilities

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

## REGULATORY SETTING

### Federal Regulations

No federal plans, policies, regulations, or laws related to transportation and circulation are applicable to the Stonegate Vesting Tentative Map and General Plan Rezone project.

### State Regulations

Caltrans owns, operates, and maintains SR 99 mainline, ramp, and ramp junction terminal facilities within the study area. Caltrans is also responsible for freeway ramp junction terminal intersections along SR 99 at E 20th Street and Skyway Road, as well as the highway and intersections along SR 32. As such, the following Caltrans planning and policy documents provide guidance on expectations related to traffic operations relevant to this analysis and the potential effects of the proposed project.

#### *District System Management Plan*

The District System Management Plan (Caltrans, 2013) sets forth the long-term (20-year) policy direction for Caltrans District 3 related to system maintenance, system completion, and congestion relief. The plan identifies two improvement projects within the project study area:

- Widening of SR 32 to 4 lanes with intersection modifications from Fir Street to El Monte Avenue
- Widening of SR 32 to 4 lanes with intersection modifications from El Monte Avenue to Yosemite Drive
- Construction of auxiliary lanes on SR 99 between Skyway Road and E 20th Street
- Construction of a Class I bike facility paralleling SR 99 between Business Lane and Cohasset Road

The plan supports complete streets development, but only includes performance expectations related to vehicle travel. In general, the plan establishes a LOS E threshold for urban areas but notes that individual transportation corridor concept reports (TCCRs) for each State route set final thresholds. The document notes that once facilities worsen to LOS F, it becomes difficult to measure further degradation to any degree of accuracy. Therefore, other performance measures can be used to define thresholds for system planning and CEQA purposes. These include vehicle travel time, vehicle hours of delay (VHD), travel reliability (i.e. the degree of variation in travel time due to congestion and non-recurring events), and lost productivity (i.e. ability of corridor to deliver travelers/good movement). The document mentions the need to develop thresholds of significance to use these measures for defining significant impacts for facilities not operating at the concept LOS, but does not identify specific thresholds.

#### *Transportation Corridor Concept Report, State Route 99*

A Transportation Corridor Concept Report (TCCR) is a long-term planning document that the District Transportation Planning Office prepares for each State highway, or portion thereof, in its

jurisdiction. The purpose of a TCCR is to plan how a highway will be managed so that it operates at the targeted level of service over a twenty-year period. The Transportation Corridor Concept Report, State Route 99 (Caltrans, 2017) establishes the following concept LOS standards for SR 99 segments in the project study area:

- Southgate Avenue to North of Eaton Road – LOS F

#### *Transportation Corridor Concept Report, State Route 32*

The Transportation Corridor Concept Report, State Route 32 (Caltrans, 2014) establishes the following concept LOS standards for SR 32 intersection with Bruce Road in the project study area:

- Fir Street to Yosemite Drive (Segment 11) – LOS E

### **Regional Regulations**

The Butte County Association of Governments (BCAG) is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS) and the corresponding Regional Transportation Improvement Program (RTIP). The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The RTIP identifies short-term projects (5-year horizon) in more detail.

### **Local Regulations**

The City of Chico maintains jurisdiction over local roadways, intersections, and non-motorized transportation facilities surrounding the project site.

#### *City of Chico General Plan*

The City of Chico General Plan (Chico of Chico, 2011) provides long-range direction and policies for the use of land within Chico. 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 establishes the following principles, policies, and actions related to transportation that are applicable to the proposed project:

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-1.4 (Level of Service Standards) – Maintain LOS D or better for roadways and intersections at the peak PM period, except as specified below:

- LOS E is acceptable for City streets and intersections under the following circumstances:
  - Downtown streets within the boundaries identified in Figure DT-1 of the Downtown Element.
  - Arterials served by scheduled transit.
  - Arterials not served by scheduled transit, if bicycle and pedestrian facilities are provided within or adjacent to the roadway.
- Utilize Caltrans LOS standards for Caltrans' facilities.
- There are no LOS standards for private roads.
- Exceptions to the LOS standards above may be considered by the City Council where reducing the level of service would result in a clear public benefit. Such circumstances include, but are not limited to, the following:
  - If improvements necessary to achieve the LOS standard results in impacts to a unique historical resource, a highly sensitive environmental area, requires infeasible right-of-way acquisition, or some other unusual physical constraint exists.
  - If the intersection is located within a corridor that utilizes coordinated signal timing, in which case, the operation of the corridor as a whole should be considered.

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.

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-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-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.

#### *Chico Urban Area Bicycle Plan*

The Chico Urban Area Bicycle Plan (City of Chico, 2012) establishes goals and objectives for recreational and transportation-related bicycle use in Chico. The plan identifies future on- and off-street bicycle facility improvements.

## ENVIRONMENTAL IMPACTS

This section describes the analysis techniques, assumptions, and results used to identify potential significant impacts of the proposed project on the transportation system. Transportation and circulation impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

### Project Analysis Methodology

The transportation and circulation analysis methodology uses the anticipated travel characteristics of the project, trip generation and mode split assumptions, and vehicle trip distribution, as described below.

#### *Project Trip Generation*

Project trip generation consists of various trip types: primary trips, internal trips, and pass-by trips. The project will also generate trips of different travel modes: vehicle, pedestrian, bicycle, and transit. The project's intersection impacts was analyzed based on the net changes to the number of vehicle trips on the surrounding roadway network.

#### Gross Trips

Gross trips were first calculated to determine all of the project trips that would be generated before any adjustments are made to account for internalization, travel mode, and pass-by trips. Trip generation was determined using the rates calculated from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition). The proposed single-family residential units (both small and large lots) are captured in the "Single-Family Detached Housing" land use category (ITE land use 210). The proposed multi-family residential units are represented by the "Apartment" land use category (ITE land use 220). The proposed medical land uses are estimated using the "Medical-Dental Office Building" land use category (ITE land use 720). The proposed commercial land uses are estimated using the "Shopping Center" land use category (ITE land use 820).

Open space is not assumed to generate trips. The proposed 3.3-acre park space is assumed to serve the local neighborhood and is not expected to generate external vehicle trips beyond the project boundary during the weekday peak hours.

Table IV.O-8 shows the gross trips calculated for the proposed project land uses. As shown, the proposed project is estimated to generate 1,213 gross AM peak hour trips, 2,377 gross PM peak hour trips, and 25,293 gross daily trips.

**Table IV.O-8  
Gross Project Trips**

Land Use	ITE Land Use Code	Quantity <sup>1</sup>	Trips						
			Daily	AM Peak Hour		PM Peak Hour			
			Total	In	Out	Total	In	Out	Total
Single Family Residential	210	469 du	4,353	85	254	339	266	156	422
Multi-Family Residential	220	233 du	1,536	24	94	118	95	51	146
Commercial (Medical Office)	720	205 ksf	7,407	387	103	490	205	527	732
Commercial (Retail)	820	240 ksf	11,997	165	101	266	517	560	1,077
<i>Gross Trips (Residential)</i> <sup>2</sup>			5,889	109	348	457	361	207	568
<i>Gross Trips (Commercial)</i> <sup>2</sup>			19,404	552	204	756	722	1,087	1,809
<b>Total Gross Trips</b>			<b>25,293</b>	<b>661</b>	<b>552</b>	<b>1,213</b>	<b>1,083</b>	<b>1,294</b>	<b>2,377</b>
Notes: <sup>1</sup> du = dwelling unit, ksf = 1,000 square feet. <sup>2</sup> Gross trips are based on Trip Generation Manual (Institute of Transportation Engineers, 2012) for all residential and commercial (retail) land uses following the fitted curve equations, and for commercial (medical office) land use following the average rate. Source: Fehr & Peers, 2017									

### Internalization and Non-Auto Travel Modes

The primary objective of the traffic analysis is to analyze impacts to the adjacent roadway system. Therefore, it is reasonable to reduce the gross trip generation volumes to account for only the inbound vehicular trips entering the project boundary, and the outbound vehicular trips exiting the project boundary. It is expected that some of the gross trips would remain internal within the project boundary between the complementary mix of residential and commercial land uses. A portion of the project trips are also expected to be made using non-auto travel modes (i.e. walking, bicycling, and transit). The internalization of project trips and the shift of project trips to non-auto travel modes was estimated using the Mixed-Use Trip Generation Model (MXD+), which was developed for the US Environmental Protection Agency (EPA) to estimate internal trip-making and external trips by non-auto travel modes. This model was developed by consultants and academic researchers based on empirical evidence at 240 mixed-use projects located across the U.S. The model considers various built environment variables such as land use density, regional location, proximity to transit, and various design variables when calculating the project's internal trips, and external trips made by auto, transit, and non-motorized modes. The MXD+ model has been applied in numerous EIRs throughout California.

Table IV.O-9 shows the internal trip reduction for the project, and shift of trips to walking, bicycle, and transit. After accounting for these trip types, the proposed project is expected to generate 1,080 AM peak hour, 1,973 PM peak hour, and 23,497 daily external vehicle trips.



**Table IV.O-9  
Project Internalization and Non-Auto Trips**

Trip Type	Trips						
	Daily	AM Peak Hour		PM Peak Hour			
	Total	In	Out	Total	In	Out	Total
Gross Trips (Residential)	5,889	109	348	457	361	207	568
Gross Trips (Commercial)	19,404	552	204	756	722	1,087	1,809
<b>Gross Trips</b>	<b>25,293</b>	<b>661</b>	<b>552</b>	<b>1,213</b>	<b>1,083</b>	<b>1,294</b>	<b>2,377</b>
Reduction for Internal Trips (Residential) <sup>1</sup>	-634	-11	-35	-46	-102	-62	-164
Reduction for Internal Trips (Commercial) <sup>1</sup>	-634	-35	-11	-46	-62	-102	-164
<b>Total Reduction for Internal Trips (5%)</b>	<b>-1,268</b>	<b>-46</b>	<b>-46</b>	<b>-92</b>	<b>-164</b>	<b>-164</b>	<b>-328</b>
External Trips All Travel Modes (Residential)	5,255	98	313	411	259	145	404
External Trips All Travel Modes (Commercial)	18,770	517	193	710	660	985	1,645
<b>Total External Trips All Travel Modes</b>	<b>24,025</b>	<b>615</b>	<b>506</b>	<b>1,121</b>	<b>919</b>	<b>1,130</b>	<b>2,049</b>
Shift to Walk/Bike/Transit (Residential) <sup>2</sup>	-123	-4	-12	-16	-12	-7	-18
Shift to Walk/Bike/Transit (Commercial) <sup>2</sup>	-405	-19	-7	-26	-23	-35	-58
<b>Total Shift to Walk/Bike/Transit Trips (2.1% Daily, 3.4% AM, 3.2% PM of Gross Trips)</b>	<b>-528</b>	<b>-22</b>	<b>-19</b>	<b>-41</b>	<b>-35</b>	<b>-41</b>	<b>-76</b>
External Vehicle Trips (Residential)	5,132	94	301	395	247	138	386
External Vehicle Trips (Commercial)	18,365	498	186	684	637	950	1,587
<b>Total External Vehicle Trips</b>	<b>23,497</b>	<b>593</b>	<b>487</b>	<b>1,080</b>	<b>884</b>	<b>1,089</b>	<b>1,973</b>
Notes: <sup>1</sup> Internal trips based on MXD+ model output <sup>2</sup> External trips made by walking, bicycling, and transit based on MXD+ model output Source: Fehr & Peers, 2017							

### Pass-by Trips and Total New External Vehicle Trips

Pass-by trips apply only to the commercial retail land uses of the project. Pass-by trips are defined as trips that would occur on the roadway immediately adjacent to the project with or without the project; therefore, would not add any through traffic to an existing roadway.

The average pass-by trip reduction percentage of 34 percent for the "Shopping Center" land use category (ITE land use 820), as noted in the ITE Trip Generation Handbook (3rd Edition), was used to estimate the pass-by trips for the commercial retail land uses.

Table IV.O-10 shows the total new external vehicle trips (i.e. primary trips) after deducting for pass-by trips. The proposed project is projected to generate 998 AM Peak Hour, 1,654 PM Peak Hour, and 19,637 Daily new external vehicle trips.

**Table IV.O-10**  
**Pass-by and Total New External Vehicle Trips Internalization and Non-Auto Trips**

Trip Type	Trips						
	Daily	AM Peak Hour		PM Peak Hour			
	Total	In	Out	Total	In	Out	Total
External Vehicle Trips (Residential)	5,132	94	301	395	247	138	386
External Vehicle Trips (Commercial)	18,365	498	186	684	637	950	1,587
<b>Total External Vehicle Trips</b>	<b>23,497</b>	<b>593</b>	<b>487</b>	<b>1,080</b>	<b>884</b>	<b>1,089</b>	<b>1,973</b>
Pass-by Trips (Residential)	-	-	-	-	-	-	-
Pass-by Trips (Commercial - Retail) <sup>1</sup>	-3,861	-51	-31	-82	-155	-166	-321
<b>Total Pass-by Trips (34% of External Vehicle Trips)</b>	<b>-3,861</b>	<b>-51</b>	<b>-31</b>	<b>-82</b>	<b>-155</b>	<b>-166</b>	<b>-321</b>
New External Vehicle Trips (Residential)	5,132	94	301	395	247	138	386
New External Vehicle Trips (Commercial)	14,504	448	155	602	482	784	1,266
<b>Total New External Vehicle Trips</b>	<b>19,637</b>	<b>542</b>	<b>456</b>	<b>998</b>	<b>729</b>	<b>922</b>	<b>1,652</b>

Notes:

<sup>1</sup> Pass-by trips for commercial retail is based on average pass-by trip percentage for Shopping Center (ITE land use 820) in the ITE Trip Generation Handbook (3rd Edition)

Source: Fehr & Peers, 2017

### *Project Vehicle Trip Distribution*

The expected distribution of vehicle trips to and from the project is shown in Figure IV.O-8. The trip distribution was developed based on the following data sources:

- Review of existing directional travel patterns to and from nearby residential and commercial developments.
- Complementary land uses (i.e., employment, retail, and schools) within the study area.
- A 'project-only' traffic assignment from the base year BCAG regional travel model.

The base year version of the BCAG regional travel model was updated to incorporate the project roadway network and land uses. The model was refined to match the external trip generation presented in Table IV.O-10. Considering the size of the project's commercial land uses being complementary to nearby residential, and the new connection of project roadways to and from the adjacent neighborhood, the regional travel model was used for both adding the external project vehicle trips onto the roadway network and to account for changes in background travel patterns. The difference in traffic volumes from the base year model without the project (Existing conditions) and with the project (Existing Plus Project) were then added to the existing traffic counts to develop the Existing Plus Project forecasts.

As shown, a minor amount of project traffic would be added to the local roads in the adjacent neighborhood (Parkhurst Street, Jasper Drive, or Webster Drive). These project trips would come from the project residential units located between the existing neighborhood and Bruce Road. The majority of project trips would be added onto Bruce Road and divided among the major arterials of E 20<sup>th</sup> Street or Skyway, with some trips to and from the north along Bruce Road.

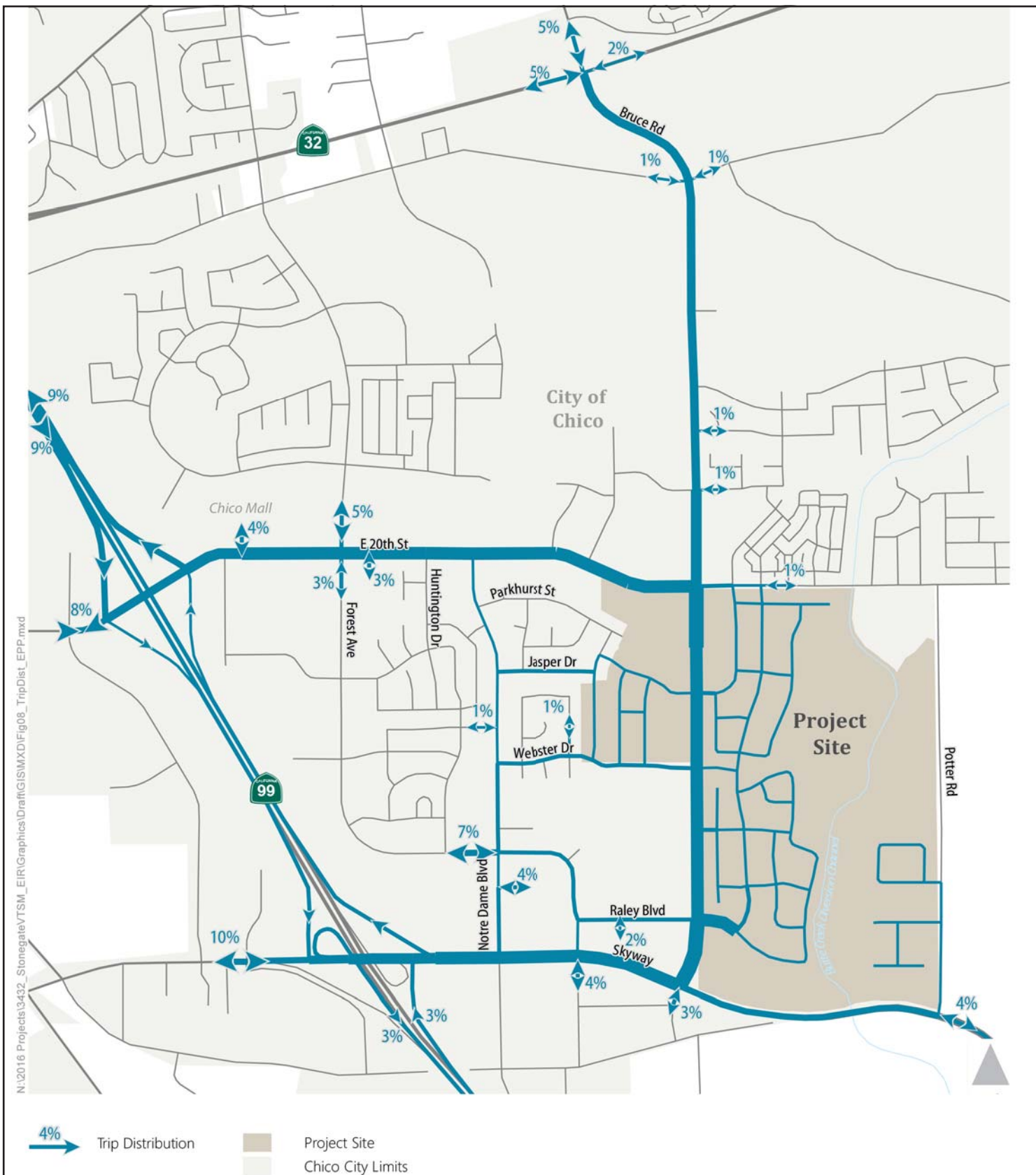


Figure IV.O-8 Project Trip Distribution - Existing Plus Project

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

## Thresholds of Significance

The California Environmental Quality Act (CEQA) includes provisions for significance criteria related to traffic and circulation impacts. In accordance with Appendix G of the CEQA Guidelines, the proposed project could have a significant environmental impact if it were to:

- a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- e. Result in inadequate emergency access;
- f. Result in inadequate parking capacity; or
- g. Conflict with adopted policies, plans, or programs supporting alternative transportation

### *Intersections*

Project impacts to the local roadway system are considered significant if:

- The traffic generated by the project degrades LOS from acceptable (without the project) to unacceptable (with the project); or
- The LOS (without the project) is already (or projected to be) unacceptable and project generated traffic increases the average vehicle delay by five seconds or more.
- The project substantially increases hazards due to a design feature or incompatible use.

The City of Chico General Plan identifies LOS standards on local roadways in **Policy CIRC-1.4 (Level of Service Standards)**. Considering the roadway and intersection conditions throughout the study area, a PM peak hour LOS E is designated as the minimum acceptable LOS standard for all study intersections under City of Chico jurisdiction (intersections 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18, and 19).

The Transportation Corridor Concept Report, State Route 32, establishes concept LOS standards for Caltrans Facilities in the project study area. At Intersection 1 (SR 32 / Bruce Rd), LOS D is designated as the minimum acceptable LOS under base year conditions, LOS F under horizon year 2034 conditions without the planned highway widening to four lanes, and LOS D under horizon year 2034 with highway widening to four lanes.

Table IV.O-11 displays the minimum acceptable LOS for each study intersection.

**Table IV.O-11  
Intersection Level of Service Standards**

<b>Intersection</b>	<b>Minimum Acceptable LOS</b>
1. State Route 32 / Bruce Road	D
2. E 20th Street / State Route 99 Southbound Ramps	F
3. E 20th Street / State Route 99 Northbound Ramps	F
4. E 20th Street / Chico Mall	E
5. E 20th Street / Forest Avenue	E
6. E 20th Street / Huntington Drive	E
7. E 20th Street / Notre Dame Boulevard	E
8. E 20th Street / Bruce Road	E
9. Notre Dame Boulevard / Parkhurst St	E
10. Notre Dame Boulevard / Jasper Drive	E
11. Notre Dame Boulevard / Webster Drive	E
12. Notre Dame Boulevard / Forest Avenue	E
13. Bruce Road / Raley Boulevard	E
14. Skyway Road / State Route 99 Southbound Ramps	F
15. Skyway Road / State Route 99 Northbound Ramps	F
16. Skyway Road / Notre Dame Boulevard	E
17. Skyway Road / Forest Avenue	E
18. Skyway Road / Bruce Road	E
19. Bruce Road / Webster Drive	E
Sources: City of Chico General Plan (2011); Transportation Corridor Concept Report, SR 99 (Caltrans, 2017); Transportation Corridor Concept Report, SR 32 (Caltrans, 2014)	

### *Freeway Facilities*

Impacts to freeway mainline, ramp, and weave segments are considered significant if:

- The traffic generated by the project degrades LOS from acceptable (without the project) to unacceptable (with the project); or
- The LOS (without the project) is already (or projected to be) unacceptable and project generated traffic increases the density by more than five percent.

The Transportation Corridor Concept Report, State Route 99 establishes a concept LOS F standard for the freeway facilities in the project study area.

Freeway facility LOS standards apply to all freeway mainline, ramp, weave, and ramp terminal facilities, including study intersections 2, 3, 14, and 15.

Impacts to off-ramp queuing is considered significant if the queues extend past the storage length and onto the freeway mainline.

### *Bicycle Facilities*

Impacts to bicycle facilities are considered significant if the proposed project would:

- Adversely affect existing or planned bicycle facilities; or
- Fail to adequately provide for access by bicycle.

Bicycle goals, policies, and existing and planned facilities are identified in the City of Chico General Plan and Chico Urban Area Bicycle Plan.

### *Pedestrian Circulation*

Impacts to pedestrian facilities are considered significant if the proposed project would:

- Adversely affect existing or planned pedestrian facilities; or
- Fail to adequately provide for access by pedestrians.

Pedestrian goals, policies, and existing and planned facilities are identified in the City of Chico General Plan.

### *Public Transit Service and Facilities*

Impacts to public transit service and facilities are considered significant if the proposed project would:

- Adversely affect public transit operations; or
- Fail to adequately provide for access to transit.

Public transit impacts are evaluated relative to existing Butte Regional Transit service and facilities and the future transit network identified in the Butte County Association of Governments (BCAG) Transit and Non-Motorized Plan (BCAG, 2015).

### **Transportation and Traffic Issues not Further Analyzed**

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft EIR, and were determined to result in a less-than-significant impact and not warrant further analysis:

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

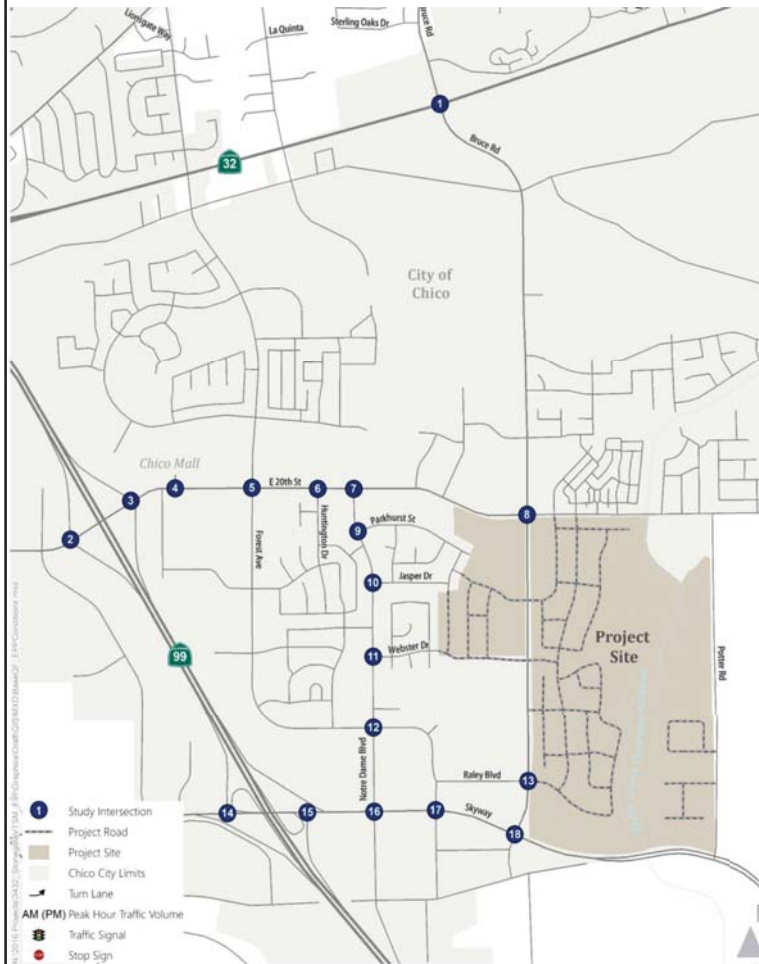
## **Project Impacts and Mitigation Measures**

Potential impacts of the proposed project upon the existing transportation system are evaluated in this section based on the standards of significance and analysis results. Each impact is followed by a recommended mitigation measure to reduce the significance of the identified impact, if needed.

### *Impact TRANSPORTATION-1: Intersection Operations*

Existing Plus Project intersection traffic volumes account for the addition of vehicle trips associated with the project and the redistribution of background traffic. Figure IV.O-9 displays the AM and PM peak hour intersection traffic volumes under Existing Plus Project conditions.





<b>1. Bruce Rd/SR 32</b> 	<b>2. SR 99 SB Ramps/E 20th St</b> 	<b>3. SR 99 NB Ramps/E 20th St</b> 	<b>4. Chico Mall/E 20th St</b> 	<b>5. Forest Ave/E 20th St</b> 
<b>6. Huntington Dr/E 20th St</b> 	<b>7. Notre Dame Blvd/E 20th St</b> 	<b>8. Bruce Rd/E 20th St</b> 	<b>9. Notre Dame Blvd/Parkhurst St</b> 	<b>10. Notre Dame Blvd/Jasper Dr</b> 
<b>11. Notre Dame Blvd/Webster Dr</b> 	<b>12. Notre Dame Blvd/Forest Ave</b> 	<b>13. Bruce Rd/Raley Blvd</b> 	<b>14. SR 99 SB Ramps/Skyway</b> 	<b>15. SR 99 NB Ramps/Skyway</b> 
<b>16. Notre Dame Blvd/Skyway</b> 	<b>17. Forest Ave/Skyway</b> 	<b>18. Bruce Rd/Skyway</b> 	<b>19. Bruce Rd/Webster Dr/Street G</b> 	

Figure IV.O-9 Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project

Stonegate Vesting Tenative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

Existing Plus Project traffic operations were analyzed utilizing the traffic volumes shown in Figure IV.O-9. Table IV.O-12 presents the Existing Plus Project peak hour intersection operations at the study intersections.

**Table IV.O-12**  
**Intersection Operations – Existing Plus Project**

Intersection	Traffic Control	Peak Hour	Existing Conditions		Existing Plus Project	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. SR 32 / Bruce Rd.	Signalized	AM PM	30 24	C C	37 25	D C
2. E 20th St. / SR 99 SB Ramps	Signalized	AM PM	9 17	A B	10 18	A B
3. E 20th St. / SR 99 NB Ramps	Signalized	AM PM	8 14	A B	9 16	A B
4. E 20th St. / Chico Mall	Signalized	AM PM	12 21	B C	10 24	A C
5. E 20th St. / Forest Ave.	Signalized	AM PM	29 46	C D	24 49	C D
6. E 20th St. / Huntington Drive	Signalized	AM PM	7 8	A A	8 9	A A
7A. E 20th St. / Notre Dame Blvd.	SSSC <sup>2</sup>	AM PM	6 (29) 8 (39)	A (D) A (E)	11 (87) <b>51 (&gt;200)</b>	B (F) <b>F (F)</b>
7B. E 20th St. / Notre Dame Blvd.	Signalized	AM PM	- -	- -	7 8	A A
8A. E 20th St. / Bruce Rd.	Signalized	AM PM	19 20	B C	32 42	C D
8B. E 20th St. / Bruce Rd.	Signalized (upgraded)	AM PM	- -	- -	20 19	B B
8C. E 20th St. Bruce Rd.	Signalized (upgraded)	AM PM	- -	- -	19 19	B B
9. Notre Dame Blvd. / Parkhurst St.	SSSC	AM PM	1 (10) 1 (10)	A (A) A (B)	1 (10) 1 (10)	A (A) A (A)
10. Notre Dame Blvd. / Jasper Dr.	SSSC	AM PM	1 (10) 0 (10)	A (A) A (B)	2 (10) 2 (11)	A (A) A (B)
11. Notre Dame Blvd. / Webster Dr.	SSSC	AM PM	2 (10) 1 (11)	A (B) A (B)	3 (11) 1 (11)	A (B) A (B)
12. Notre Dame Blvd. / Forest Ave.	Signalized	AM PM	13 14	B B	13 29	B C
13A. Bruce Rd. / Raley Blvd.	SSSC	AM PM	2 (19) 9 (37)	A (C) A (E)	<b>126 (&gt;200)</b> <b>&gt;200 (&gt;200)</b>	<b>F (F)</b> <b>F (F)</b>
13B. Bruce Rd. / Raley Blvd.	Signalized	AM PM	- -	- -	21 53	C D
14. Skyway / SR 99 SB Ramps	Signalized	AM PM	11 14	B B	13 15	B B
15. Skyway / SR 99 NB Ramps	Signalized	AM PM	6 11	A B	8 12	A B
16. Skyway / Notre Dame Blvd.	Signalized	AM PM	23 30	C C	23 29	C C
17A. Skyway / Forest Ave.	SSSC	AM PM	3 (>200) 15 (>200)	A (F) C (F)	10 (>200) <b>55 (&gt;200)</b>	B (F) <b>F (F)</b>
17B. Skyway / Forest Ave.	Signalized	AM PM	- -	- -	13 10	B A

18. Skyway / Bruce Rd.	Signalized	AM PM	17 21	B C	23 27	C C
19. Bruce Rd. / Webster Dr.	Signalized	AM PM	-	-	7 7	A A

Notes: LOS = Level of Service. SSSC = Side-Street Stop-Controlled. **Bold** indicates unacceptable LOS.

<sup>1</sup>For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For SSSC intersections, the LOS and control delay for the worst movement is shown in parentheses next to the average intersection LOS and delay. Impacts to intersections are determined based on the overall LOS and average delay. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010).

<sup>2</sup>Intersection 7 – E 20<sup>th</sup> Street / Notre Dame Blvd. was upgraded to a signalized traffic control in December 2017. See row 7B for anticipated delay and LOS associated with the current intersection configuration.

<sup>3</sup>Intersection 8 – E 20<sup>th</sup> Street / Bruce Road is proposed to be a roundabout on the tentative map, however, preliminary research for the Bruce Road Widening Project indicates that a two-lane roundabout would not be adequate for that intersection. Rows 8B and 8C reflect two options for upgrading the intersection by widening the approaches and adding turn lanes.

Source: Fehr & Peers, 2017

As shown in Table IV.O-12, all but three of the study intersections would continue to operate at acceptable LOS thresholds during the weekday AM and PM peak hours under Existing Plus Project conditions.

The intersection at E 20<sup>th</sup> Street / Notre Dame Boulevard (Intersection 7) was upgraded with a traffic signal in December 2017, during preparation of this DEIR. The projected LOS at this intersection under the Existing Plus Project conditions is acceptable, as indicated on row 7B of Table IV.O-12, above.

Full build-out of the proposed project would result in LOS F conditions during the AM and PM peak hours at Bruce Road / Raley Boulevard (Intersection 13). The project would add an eastern leg to the existing side street stop controlled intersection, serving mostly the medical/dental office land use (Lot 472). The high amount of project traffic to and from Raley Boulevard would face significant vehicle delay on the minor street approach, and would worsen the overall operations of the intersection from acceptable LOS A to unacceptable LOS F under both AM and PM peak hours. As provided in the cumulative impacts analysis below, this intersection is anticipated to operate acceptably (LOS E) as a stop-controlled intersection under future cumulative conditions without the project, therefore traffic from the proposed project creates the need to add capacity at the intersection that would not otherwise be needed to accommodate general growth. This intersection is not currently included in the City's Development Impact Fee (Nexus) Program, therefore upgrading to a signal in conjunction with development of the project is necessary to avoid creating an unacceptable LOS at this location. Although the project is responsible for causing the need to upgrade the intersection to a signal control, there may be other properties that benefit from such an improvement and the developer that installs the traffic signal may qualify for a partial reimbursement from such benefitting properties as set forth by section 3.84 the Chico Municipal Code. With signalization, the intersections would operate at acceptable LOS C under the AM peak hour, and acceptable LOS D under the PM peak hour, as indicated in row 13B of Table IV.O-12, above.

Full build-out of the proposed project would result in LOS F conditions during the PM peak hour at Skyway / Forest Avenue (Intersection 17). The project would mostly add trips to the major street (Skyway) due to development of medical/dental office uses on Lot 472, making it more

difficult for drivers on the minor stop controlled streets (Forest Avenue/Zanella Way) to enter the intersection. The delay for the overall intersection, mostly due to an increase in delay for the side street stop movements, would worsen from acceptable LOS C to unacceptable LOS F. This intersection is currently included in the City's Development Impact Fee (Nexus) Program, however the City's Capital Improvement project to upgrade to a signal at this location is not anticipated to occur within the near-term future scenario analyzed in this section. Since development of Lot 472 may likely precede the City's project to signalize this intersection upgrading to a signal in conjunction with development of Lot 472 is necessary to avoid creating an unacceptable LOS at this location.

Due to the increase in delay from acceptable to unacceptable conditions at Bruce Road / Raley Boulevard and Skyway / Forest Avenue (Intersections 13 and 17), the project would result in a **significant** impact to intersection operations.

*Mitigation Measure TRANSPORTATION-1: Install a Traffic Signal at Bruce Road / Raley Boulevard (Intersection 13)*

The AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes at full project build-out would meet Signal Warrant 3 – Peak Hour Warrant for the AM and PM peak hours. With the implementation of a traffic signal the weekday AM peak hour level of service would improve from LOS F to LOS C, and the PM peak hour level of service would improve from LOS F to LOS D, which would result in a **less-than-significant** impact after mitigation.

The applicant shall design, fund, and install a traffic signal when signal warrants are met. The City shall be responsible for monitoring traffic conditions at the intersection and notifying the applicant, in writing, when traffic signal installation is required. Following such notification from the City that the traffic signal is required, the signal shall be included on any subsequent subdivision improvement plans for the project, and no new building permits for traffic-generating uses shall be issued on Lot 472 until the signal has been installed or progress toward installation is substantially underway. To the extent that the applicant qualifies for reimbursement for a portion of the costs associated with this improvement pursuant to provisions of the Chico Municipal Code, the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City.

*Mitigation Measure TRANSPORTATION-2: Install a Traffic Signal at Skyway / Forest Avenue (Intersection 17)*

The PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes meet Signal Warrant 3 – Peak Hour Warrant for the PM peak hour. With the implementation of a traffic signal the weekday PM peak hour level of service would improve from LOS F to LOS A, which would result in a **less-than-significant** impact.

The applicant shall design, fund, and install a traffic signal when signal warrants are met. The City shall be responsible for monitoring traffic conditions at the intersection and notifying the applicant, in writing, when traffic signal installation is required. Following such notification from the City that the traffic signal is required, the signal shall be included on any subsequent subdivision improvement plans for the project, and no new building permits for traffic-generating uses shall be issued on Lot 472 until the signal has been installed or progress toward installation is substantially underway. To the extent that the applicant qualifies for reimbursement for the costs associated with this improvement pursuant to provisions of the Chico Municipal Code, the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City.

*Impact TRANSPORTATION-2: Freeway Operations*

Figure IV.O-10 displays the AM and PM peak hour freeway volumes under Existing Plus Project. Table IV.O-13 shows the freeway operations under Existing Plus Project.

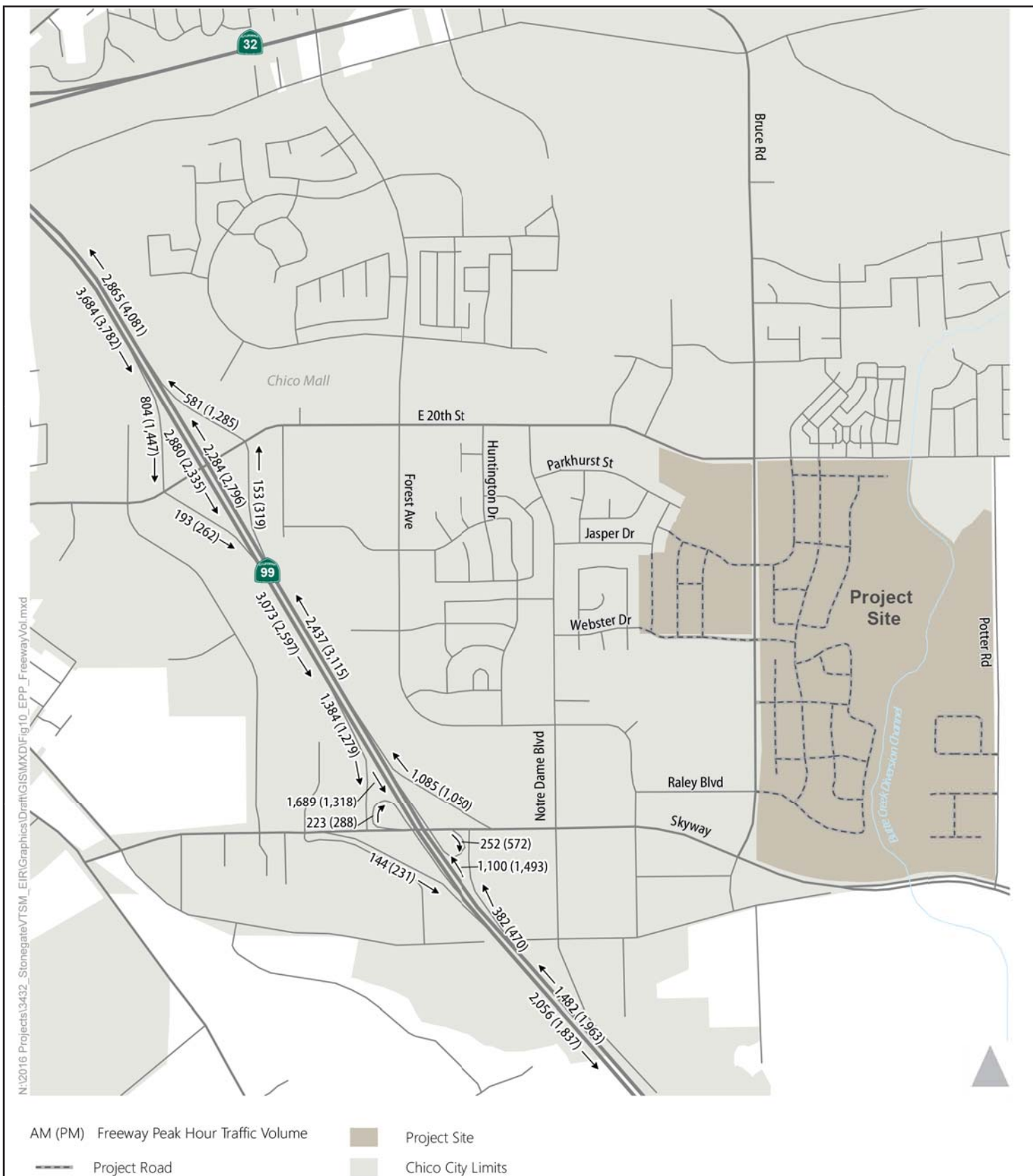


Figure IV.O-10 Existing Plus Project Freeway Volumes

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

**Table IV.O-13**  
**Freeway Operations – Existing Plus Project**

Freeway	Segment	Segment Type	Peak Hour	Existing Conditions		Existing Plus Project	
				Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
State Route 99 Northbound	South of Skyway	Basic	AM PM	13.8 17.4	B B	14.2 17.5	B B
	Skyway Off-Ramp	Diverge	AM PM	18.8 22.8	B C	19.2 22.9	B C
	Skyway	Basic	AM PM	10.5 13.4	A B	10.5 13.3	A B
	Skyway Loop On-Ramp	Merge	AM PM	16.8 21.8	B C	16.8 21.9	B C
	Skyway Slip On-Ramp	Merge	AM PM	25.7 29.9	C D	25.9 30.2	C D
	Skyway to E 20th Street	Basic	AM PM	23.1 27.1	C D	23.4 27.6	C D
	E 20th Street Off-Ramp	Diverge	AM PM	29.1 31.8	D D	29.4 32.2	D D
	E 20th St	Basic	AM PM	21.6 22.8	C C	21.9 23.2	C C
	E 20th Street On-Ramp	Merge	AM PM	30.9 36.3	D E	31.7 37.0	D E
	North of E 20th Street	Basic	AM PM	27.3 37.7	D E	28.3 39.2	D E
State Route 99 Southbound	North of E 20th Street	Basic	AM PM	38.2 37.0	E E	38.9 38.4	E E
	E 20th Street Off-Ramp	Diverge	AM PM	40.6 39.9	E E	41.0 40.7	E E
	E 20th Street	Basic	AM PM	26.7 20.4	D C	26.9 20.6	D C
	E 20th Street On-Ramp	Merge	AM PM	31.5 25.7	D C	31.6 25.9	D C
	E 20th Street to Skyway	Basic	AM PM	29.5 23.0	D C	29.7 23.2	D C
	Skyway Off-Ramp	Diverge	AM PM	35.3 29.3	E D	35.5 29.6	E D
	Skyway	Basic	AM PM	15.8 11.9	B B	15.8 11.9	B B
	Skyway Loop On-Ramp	Merge	AM PM	20.7 16.9	C B	21.0 17.3	C B
	Skyway On-Ramp	Merge	AM PM	22.1 19.1	C B	22.4 19.5	C B
	South of Skyway	Basic	AM PM	19.0 16.2	C B	19.2 16.6	C B

Notes:

<sup>1</sup> Density expressed in passenger car equivalents per hour per mile per lane.

Source: Fehr &amp; Peers, 2017

As shown all freeway mainline segments and ramp merge and diverge segments operate at acceptable LOS E or better under Existing Plus Project. Table IV.O-14 shows the freeway off-ramp queuing under existing plus project. As shown, all queues remain within the available storage with the inclusion of the project.

**Table IV.O-14**  
**Freeway Off-Ramp Queueing – Existing Plus Project**

Facility	Storage Length (feet)	Peak Hour	Existing Conditions	Existing Plus Project
			Queue (feet)	Queue (feet)
SR 99 Southbound Off-Ramp at E. 20th St	1,350	AM PM	175 300	200 325
SR 99 Northbound Off-Ramp at E. 20th St	1,350	AM PM	125 175	100 200
SR 99 Southbound Off-Ramp at Skyway Rd	1,500	AM PM	250 275	225 575
SR 99 Northbound Off-Ramp at Skyway Rd	1,275	AM PM	150 200	150 225
Notes: Average maximum queue is calculated using an average of 10 SimTraffic runs. Storage length is measured using aerial imagery.				
Source: Fehr & Peers 2017				

Due to the freeway mainline, merge, diverge, and off-ramp queuing operating acceptably, the project would create a **less-than-significant** impact to freeway operations.

#### *Impact TRANSPORTATION -3: Bicycle Facilities*

The project would include Class II bike lanes on Bruce Road between E 20<sup>th</sup> Street and Skyway. The project would also connect to existing bike lanes on Bruce Road, E 20<sup>th</sup> Street, and Skyway.

The southeast portion of the project site that contains 45 suburban-residential lots (RS-20 lots) would be served by an existing class I bike path along Potter Road; however, no direct bike connection would be available from the residential units to the existing nearby commercial land uses west along Skyway. There currently are no bike lanes present on Skyway that provide continuity between Bruce Road and Potter Road, and none are proposed along this section as part of the project to serve the new homes planned for the RS-20 lots. Placing new housing along Potter Road without a bicycle connection to the nearby commercial uses located on Skyway to the west would substantially increase potential hazards for future residents, as the future residents may attempt to travel the shortest route to the nearest store via bicycle. Further, not including adequate bicycle and pedestrian facilities along this project frontage is inconsistent with several General Plan Policies and Actions that direct incorporation of multi-modal facilities into project designs (CIRC-2.1, CIRC-2.1.3, CIRC-2.2.1, CIRC-3.3 and CIRC-4.2). Since the project does not provide adequate bicycle access for the RS-20 lots, this is considered a **significant** impact.



*Mitigation Measure TRANSPORTATION-3: Add Bike Lanes or Path Along Skyway*

Subdivision improvement plans for the RS-20 lots located along Potter Road (Phases 11 and/or 12), shall include the provision of bike lanes or path connection along Skyway between Potter Road and existing facilities near Bruce Road. Since the existing Skyway bridge crossing over the Butte Creek Diversion Channel is too narrow to accommodate any additional bicycle or pedestrian facilities, a new bridge crossing will be needed to fulfill this mitigation. Any additional public right-of-way needed to accommodate this connection shall be dedicated by the developer. Final design details for the connection required by this mitigation shall be subject to review and approval by the Public Works Director.

Implementation of this bicycle facility would provide adequate bicycle access for the RS-20 lots; therefore, this impact would be reduced to a **less-than-significant** level.

*Impact TRANSPORTATION-4: Pedestrian Facilities*

The project would include sidewalks along all project roadways, including Bruce Road between E 20<sup>th</sup> Street and Skyway, and on the south side of E 20<sup>th</sup> Street west of Bruce Road.

The southeast portion of the project site serving the RS-20 lots would be served by an existing path along Potter Road; however, no direct pedestrian facility would be available to the commercial land uses west along Skyway. There is no sidewalk connection present on Skyway between Bruce Road and Potter Road, and none is proposed along this section as part of the project to serve the new homes planned for the RS-20 lots. Placing new housing along Potter Road without a pedestrian connection to the nearby commercial uses located on Skyway to the west would substantially increase potential hazards for future residents, as the future residents may attempt to walk the shortest route to the nearest store. Further, not including adequate bicycle and pedestrian facilities along this project frontage is inconsistent with several General Plan Policies and Actions that direct incorporation of multi-modal facilities into project designs (CIRC-2.1, CIRC-2.1.3, CIRC-2.2.1, CIRC-3.3 and CIRC-4.2). Therefore, because the project does not provide adequate pedestrian access for the RS-20 lots, this is considered a **significant** impact.

*Mitigation Measure TRANSPORTATION-4: Add Sidewalk or Path Along Skyway*

Subdivision improvement plans for the RS-20 lots located along Potter Road (Phases 11 and/or 12), shall include the provision of sidewalk or path connection along Skyway between Potter Road and facilities located near Bruce Road. Since the existing Skyway bridge crossing over the Butte Creek Diversion Channel is too narrow to accommodate any additional bicycle or pedestrian facilities, a new bridge crossing will be needed to fulfill this mitigation. Any additional public right-of-way needed to accommodate this connection shall be dedicated by the developer. Final design details for the connection required by this mitigation shall be subject to review and approval by the Public Works Director.

Implementation of this pedestrian facility would provide adequate pedestrian access for the RS-20 lots; therefore, this impact would be reduced to a **less-than-significant** level.

*Impact TRANSPORTATION-5: Transit Facilities*

Approximately 90 percent of the project's residential land use is within ½ mile of an existing bus stop and transit route, the upper limit for a reasonable walk to access transit service. No new transit routes or bus stops are specifically identified within the project description. The *BCAG Transit and Non-Motorized Plan* identifies Bruce Road between SR 32 and Skyway as a corridor for potential future transit service in conjunction with surrounding peripheral development. Considering that the project does not include any new transit service or bus stops along Bruce Road between E 20th Street and Skyway through the project site, or on Skyway near Potter Road serving the southeast portion of the project, a portion of the project site would not have adequate access to transit service. Therefore, this would be a **potentially significant** impact.

*Mitigation Measure TRANSPORTATION-5: Transit Stops and Routes*

Prior to City approval of each set of detailed subdivision improvement plans, the applicant shall coordinate with local public transit providers to determine a suitable transit service concept for the project site that does not substantially alter existing public transit operations and is consistent with relevant service standards and new service warrants. Potential transit service modifications include a new route or route extension along Bruce Road between E 20th Street and Skyway (consistent with the *BCAG Transit and Non-Motorized Plan*) and the installation of bus stops internal to the project site. Bus stops should be installed at locations within close proximity to key pedestrian routes (e.g. the Bruce Road / Webster Drive and Skyway / Potter Road intersections). Implementation of this mitigation measure would provide adequate access to transit service, therefore, this impact would be reduced to a **less-than-significant** level.

## CUMULATIVE IMPACTS

The Cumulative scenario is the analysis scenario in which traffic impacts are analyzed assuming the development of numerous reasonable and foreseeable land uses expected in 2035. This analysis utilizes the 2010 BCAG travel demand model, developed as part of the 2012 BCAG MTP/SCS, to establish future land use and traffic assumptions for 2035. While a City of Chico travel demand model is available, the BCAG travel demand model was utilized for this study because it includes more recent existing and future land use and roadway network within the City of Chico and throughout the BCAG region. To ensure that the BCAG model was sensitive and accurate for this application, it was tested and validated against benchmarks specified by the modeling guidelines contained in the 2010 California Regional Transportation Plan Guidelines (CTC, 2010) and the Travel Model Validation and Reasonable Checking Manual, Second Edition (FHWA, 2010). For cumulative conditions, year 2035 land used inputs were updated to incorporate new development projects that may have been omitted from the original version of the BCAG travel demand model.

Cumulative No Project conditions assume no development or transportation modifications associated with the Stonegate Vesting Subdivision Map project. The Cumulative Plus Project scenario is the analysis scenario in which transportation impacts associated with the proposed project are analyzed in comparison to the Cumulative No Project scenario. Project-related impacts with potential to occur under the Cumulative Plus Project scenario are presented at the end of this section.

### *Cumulative Roadway and Intersection Improvements*

Roadway and intersection improvement projects assumed to be completed under Cumulative conditions are presented below. These include future local roadways as identified in the *City of Chico General Plan*, as well as future freeway improvements identified in the *Transportation Corridor Concept Report, State Route 99* and *Transportation Corridor Concept Report, State Route 32*.

- Auxiliary lanes in both directions on SR 99 between Skyway and E 20<sup>th</sup> Street
- Auxiliary lanes in both directions on SR 99 between E 20<sup>th</sup> Street and SR 32
- SR 32 widening to four lanes between Fir St and Yosemite Drive
- E 20<sup>th</sup> St widening to four lanes between Huntington Drive and Bruce Road
- Extension of Notre Dame Boulevard from E 20<sup>th</sup> Street to Hartford Drive
- Bruce Rd widening to four lanes between SR 32 and Skyway, including a 2-lane roundabout (as proposed on the tentative map) or improved signalized intersection (as anticipated by the City's Bruce Road Widening Project) at E 20<sup>th</sup> Street
- New traffic signal at E 20<sup>th</sup> St / Notre Dame Boulevard
- New traffic signal at Skyway / Potter Road

### *Cumulative Land Use Developments*

Notable land use developments in the vicinity of the project site assumed to be developed under cumulative conditions include the following:

- Meriam Park (mixed-use subdivision northwest corner of E 20<sup>th</sup> Street and Bruce Road)
- Belvedere Heights (build-out of residential subdivision north of E 20<sup>th</sup> Street to the west of Bruce Road)
- Special Planning Area 5 – Doe Mill / Honey Run (mostly residential development, some commercial land use, to the east of Potter Road between E 20<sup>th</sup> Street and Skyway)
- Canyon View High School (northwest corner of Bruce Road and Raley Boulevard)

### *Traffic Forecasts*

A traffic forecasting procedure known as the “difference method” was used to develop cumulative background forecasts. The procedure adds the growth in traffic between the base and future year traffic models to the existing traffic volume. This process accounts for inaccuracies in the base year model, which if not accounted for, would carry forward into the future year model.

The expected distribution of vehicle trips to and from the project under cumulative conditions is shown in Figure IV.O-11. The trip distribution was developed based on the following data sources:

- Complementary land uses (i.e., employment, retail, and schools) within the study area.
- A ‘project-only’ traffic assignment from the cumulative year BCAG regional travel model.

The cumulative year version of the BCAG regional travel model was updated to incorporate the project roadway network and land uses. The model was refined to match the external trip generation presented in Table IV.O-10. Considering the size of the project’s commercial land uses being complementary to nearby residential, and the new connection of project roadways to and from the adjacent neighborhood, the regional travel model was used for both adding the external project vehicle trips onto the roadway network and to account for changes in background travel patterns.

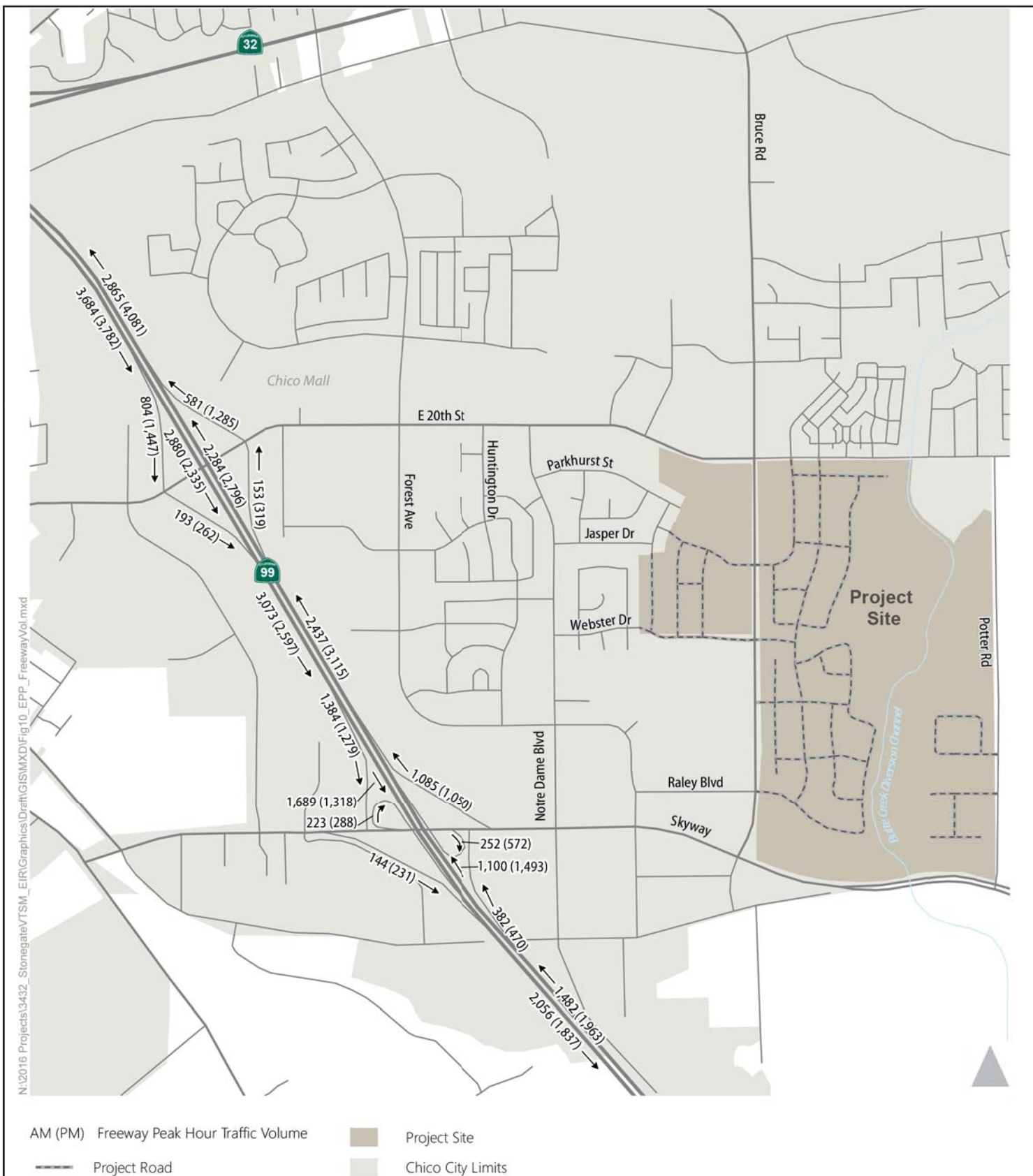


Figure IV.O-11 Project Trip Distribution - Cumulative Plus Project

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

## **Cumulative Impacts and Mitigation Measures**

Potential impacts of the proposed project upon the cumulative transportation system are evaluated based on the thresholds of significance and analysis results. Each project impact is followed by a recommended mitigation measure to reduce the significance of the identified impact, if needed.

### *Impact TRANSPORTATION-7: Cumulative Intersection Operations*

Figure IV.O-12 displays the peak hour intersection traffic volumes under Cumulative No Project conditions. Cumulative Plus Project intersection traffic volumes account for the addition of vehicle trips associated with the project and the redistribution of background traffic. Figure IV.13 displays the traffic volumes under Cumulative Plus Project conditions.



<b>1. Bruce Rd/SR 32</b> 	<b>2. SR 99 SB Ramps/E 20th St</b> 	<b>3. SR 99 NB Ramps/E 20th St</b> 	<b>4. Chico Mall/E 20th St</b> 	<b>5. Forest Ave/E 20th St</b> 
<b>6. Huntington Dr/E 20th St</b> 	<b>7. Notre Dame Blvd/E 20th St</b> 	<b>8. Bruce Rd/E 20th St</b> 	<b>9. Notre Dame Blvd/Parkhurst St</b> 	<b>10. Notre Dame Blvd/Jasper Dr</b> 
<b>11. Notre Dame Blvd/Webster Dr</b> 	<b>12. Notre Dame Blvd/Forest Ave</b> 	<b>13. Bruce Rd/Raley Blvd</b> 	<b>14. SR 99 SB Ramps/Skyway</b> 	<b>15. SR 99 NB Ramps/Skyway</b> 
<b>16. Notre Dame Blvd/Skyway</b> 	<b>17. Forest Ave/Skyway</b> 	<b>18. Bruce Rd/Skyway</b> 		

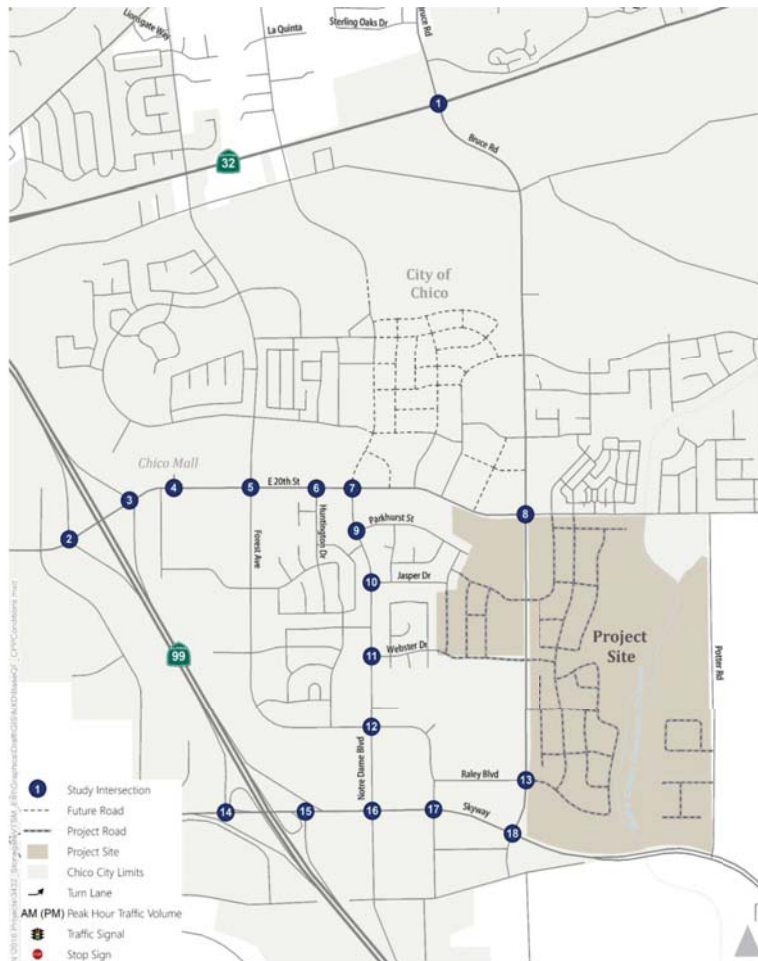
Figure IV.O-12 Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers





<b>1. Bruce Rd/SR 32</b> 	<b>2. SR 99 SB Ramps/E 20th St</b> 	<b>3. SR 99 NB Ramps/E 20th St</b> 	<b>4. Chico Mall/E 20th St</b> 	<b>5. Forest Ave/E 20th St</b> 
<b>6. Huntington Dr/E 20th St</b> 	<b>7. Notre Dame Blvd/E 20th St</b> 	<b>8. Bruce Rd/E 20th St</b> 	<b>9. Notre Dame Blvd/Parkhurst St</b> 	<b>10. Notre Dame Blvd/Jasper Dr</b> 
<b>11. Notre Dame Blvd/Webster Dr</b> 	<b>12. Notre Dame Blvd/Forest Ave</b> 	<b>13. Bruce Rd/Raley Blvd</b> 	<b>14. SR 99 SB Ramps/Skyway</b> 	<b>15. SR 99 NB Ramps/Skyway</b> 
<b>16. Notre Dame Blvd/Skyway</b> 	<b>17. Forest Ave/Skyway</b> 	<b>18. Bruce Rd/Skyway</b> 	<b>19. Bruce Rd/Webster Dr/Street G</b> 	

Figure IV.O-13 Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers



Table IV.O-15. shows the intersection operations under Cumulative No Project and Cumulative Plus Project conditions.

**Table IV.O-15**  
**Intersection Operations – Cumulative Plus Project**

Intersection	Traffic Control	Peak Hour	Cumulative No Project		Cumulative Plus Project	
			Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. SR 32 / Bruce Rd.	Signalized	AM PM	<b>57</b> 44	<b>E</b> D	<b>59</b> 46	<b>E</b> D
2. E 20th St. / SR 99 SB Ramps	Signalized	AM PM	11 39	B D	12 42	B D
3. E 20th St. / SR 99 NB Ramps	Signalized	AM PM	18 26	B C	19 27	B C
4. E 20th St. / Chico Mall	Signalized	AM PM	13 53	B D	14 67	B E
5. E 20th St. / Forest Ave.	Signalized	AM PM	43 72	D E	43 75	D E
6. E 20th St. / Huntington Drive	Signalized	AM PM	9 10	A A	9 10	A B
7. E 20th St. / Notre Dame Blvd.	Signalized	AM PM	17 22	B C	18 24	B C
8A. E 20th St. / Bruce Rd.	Signalized	AM PM	<b>141</b> 71	<b>F</b> E	<b>184</b> <b>132</b>	<b>F</b> <b>F</b>
8B. E 20th St. / Bruce Rd.	Signalized (upgraded) <sup>2</sup>	AM PM	66 37	E D	<b>91</b> 47	<b>F</b> D
8C. E 20th St. / Bruce Rd.	Signalized (upgraded)	AM PM	35 36	C D	45 46	D D
9. Notre Dame Blvd. / Parkhurst St.	SSSC	AM PM	1 (11) 1 (11)	A (B) A (B)	1 (11) 1 (11)	A (B) A (B)
10. Notre Dame Blvd. / Jasper Drive	SSSC	AM PM	1 (11) 1 (12)	A (B) A (B)	1 (10) 1 (12)	A (B) A (B)
11. Notre Dame Blvd. / Webster Drive	SSSC	AM PM	1 (11) 1 (12)	A (B) A (B)	2 (12) 1 (12)	A (B) A (B)
12. Notre Dame Blvd. / Forest Ave.	Signalized	AM PM	18 16	B B	28 17	C B
13A. Bruce Rd. / Raley Blvd.	SSSC	AM PM	3 (82) 35 (>200)	A (F) E (F)	<b>&gt;200 (&gt;200)</b> <b>&gt;200 (&gt;200)</b>	<b>F (F)</b> <b>F (F)</b>
13B. Bruce Rd. / Raley Blvd.	Signalized	AM PM	-	-	19 69	B E
14. Skyway / SR 99 SB Ramps	Signalized	AM PM	13 13	B B	13 14	B B
15. Skyway / SR 99 NB Ramps	Signalized	AM PM	8 8	A A	9 9	A A
16. Skyway / Notre Dame Blvd.	Signalized	AM PM	27 30	C C	26 32	C C

17A. Skyway / Forest Ave.	SSSC	AM PM	<b>&gt;200 (&gt;200)</b> <b>&gt;200 (&gt;200)</b>	<b>F (F)</b> <b>F (F)</b>	<b>&gt;200 (&gt;200)</b> <b>&gt;200 (&gt;200)</b>	<b>F (F)</b> <b>F (F)</b>
17B. Skyway / Forest Ave.	Signalized	AM PM	17 12	B B	17 15	B B
18. Skyway / Bruce Rd.	Signalized	AM PM	30 41	C D	42 51	D D
19. Bruce Rd. / Webster Dr.	Signalized	AM PM	- -	- -	7 7	A A
<p>Notes: LOS = Level of Service. SSSC = Side-Street Stop-Controlled. <b>Bold</b> indicates unacceptable LOS.</p> <p><sup>1</sup>For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For SSSC intersections, the LOS and control delay for the worst movement is shown in parentheses next to the average intersection LOS and delay. Impacts to intersections are determined based on the overall LOS and average delay. Intersection LOS and delay is calculated based on the procedures and methodology contained in the HCM 2010 (TRB, 2010).</p> <p><sup>2</sup> Intersection 8 – E 20<sup>th</sup> Street / Bruce Road is proposed to be a two-lane roundabout on the tentative map, however, preliminary research for the Bruce Road Widening Project indicates that a two-lane roundabout would not be adequate for that intersection. Row 8B and 8C reflect the intersection remaining signalized under future conditions, though with widened approaches and reconfigured turn lanes.</p> <p>Source: Fehr &amp; Peers, 2017</p>						

As shown in Table IV.O-15, all but four study intersections would continue to operate at acceptable LOS thresholds during the weekday AM and PM peak hours under Cumulative Plus Project.

Operations at SR 32 / Bruce Road (Intersection 1) are expected to worsen to unacceptable LOS E under Cumulative Plus Project conditions, with project-generated traffic increasing the average vehicle delay by 2 seconds during the AM peak hour. Although the project would add additional traffic at this intersection, the added delay would be less than 5 seconds during both AM and PM peak hours; therefore the project's impact to this intersection is considered less than significant.

Operations at E 20<sup>th</sup> Street / Bruce Road (Intersection 8) are expected to worsen under Cumulative No Project conditions due to the increase in traffic on Bruce Road associated with the widening to four lanes, and the addition of traffic on E 20<sup>th</sup> associated with nearby residential developments. The addition of project traffic at this intersection under Cumulative Plus Project would worsen vehicle delay from unacceptable conditions by more than 5 seconds under AM peak hour, and from acceptable LOS E to unacceptable LOS F under PM peak hour. This intersection is currently included in the City's Nexus program as part of the Bruce Road Widening Project, thus it is anticipated that the intersection will be signalized in the future as a City capital improvement project. Development impact fees paid by the developer of the Stonegate project represent the project's fair share toward funding citywide capital improvement projects needed to address cumulative traffic volumes, including this intersection. The development impact fee program is currently (2018) being addressed by the Chico City Council to ensure that adequate fees amounts are collected for these future community-serving projects. Since this intersection is adjacent to the project site, dedication of the necessary right-of-way and possible interim or full intersection improvements will be required in conjunction with development of project phases. To the extent that the applicant qualifies for reimbursement for the costs associated with this improvement pursuant to provisions of the Chico Municipal Code, the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City.

The proposed project would result in LOS F conditions during the AM and PM peak hours at Bruce Road / Raley Boulevard (Intersection 13) under Cumulative Plus Project conditions. The project would add an eastern leg to the existing side street stop controlled intersection, serving mostly the medical/dental office land use on proposed Lot 472. The high amount of project traffic to and from Raley Boulevard would face significant vehicle delay on the minor street approach, and would worsen the overall operations of the intersection from acceptable LOS A to unacceptable LOS F under the AM peak hour, and from acceptable LOS E to unacceptable LOS F under the PM peak hour. Signalization of this intersection is not currently included in the City's Nexus program, therefore upgrading to a signal in conjunction with development of the project is necessary to avoid creating an unacceptable LOS at this location. Although the project is responsible for causing the need to upgrade the intersection to a signal control, there may be other properties that benefit from such an improvement and the developer that installs the traffic signal may qualify for a partial reimbursement from such benefitting properties as set forth by section 3.84 the Chico Municipal Code.

If left as a stop-controlled intersection, the proposed project would worsen unacceptable LOS F conditions during the AM and PM peak hours at Skyway / Forest Avenue (Intersection 17) under Cumulative Plus Project conditions. The project would mostly add trips to the major street (Skyway), making it more difficult for drivers on the minor stop controlled streets (Forest Avenue/Zanella Way) from entering the intersection. The delay for the overall intersection, mostly due to an increase in delay for the side street stop movements, would increase by more than 5 seconds under both AM and PM peak hours. This intersection is currently included in the City's Nexus Program. It is anticipated that the intersection will be signalized in the future either pursuant to *Mitigation Measure TRANSPORTATION-2*, above, or as a City capital improvement project. If constructed by the applicant, to the extent that the applicant qualifies for reimbursement for the costs associated with this improvement pursuant to provisions of the Chico Municipal Code the applicant may pursue a Memorandum of Reimbursable Street Facility Costs with the City

Due to the increase in delay from acceptable to unacceptable conditions at Bruce Road / Raley Boulevard (Intersection 13), or worsening of already-unacceptable delay by more than 5 seconds at Skyway / Forest Avenue (Intersection 17), the project would result in potentially **significant** impacts to intersection operations under Cumulative Plus Project conditions.

*Mitigation Measure TRANSPORTATION-6: Install a Traffic Signal at Bruce Road / Raley Boulevard (Intersection 13)*

The AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes at full project build-out would meet Signal Warrant 3 – Peak Hour Warrant for the AM and PM peak hours. With the implementation of a traffic signal the weekday AM peak hour level of service would improve from LOS F to LOS C, and the PM peak hour level of service would improve from LOS F to LOS E, which would result in a **less-than-significant** impact after mitigation.

The applicant shall implement *Mitigation Measure TRANSPORTATION-1*.

*Mitigation Measure TRANSPORTATION-7: Install a Traffic Signal at Skyway / Forest (Intersection 17)*

AM and PM peak hour traffic volumes at this intersection were analyzed to determine if a traffic signal would be warranted. According to the California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans 2014, the projected traffic volumes meet Signal Warrant 3 – Peak Hour Warrant for both peak hours. With the implementation of a traffic signal the weekday AM and PM peak hour level of service would improve from LOS F to LOS B, which would result in a ***less-than-significant*** impact after mitigation.

The applicant shall implement *Mitigation Measure TRANSPORTATION-2*.

*Impact TRANSPORTATION-8: Cumulative Freeway Operations*

Figure IV.O-14 displays the peak hour freeway volumes under Cumulative No Project, and Figure IV.O-15 displays the peak hour freeway volumes under Cumulative Plus Project.

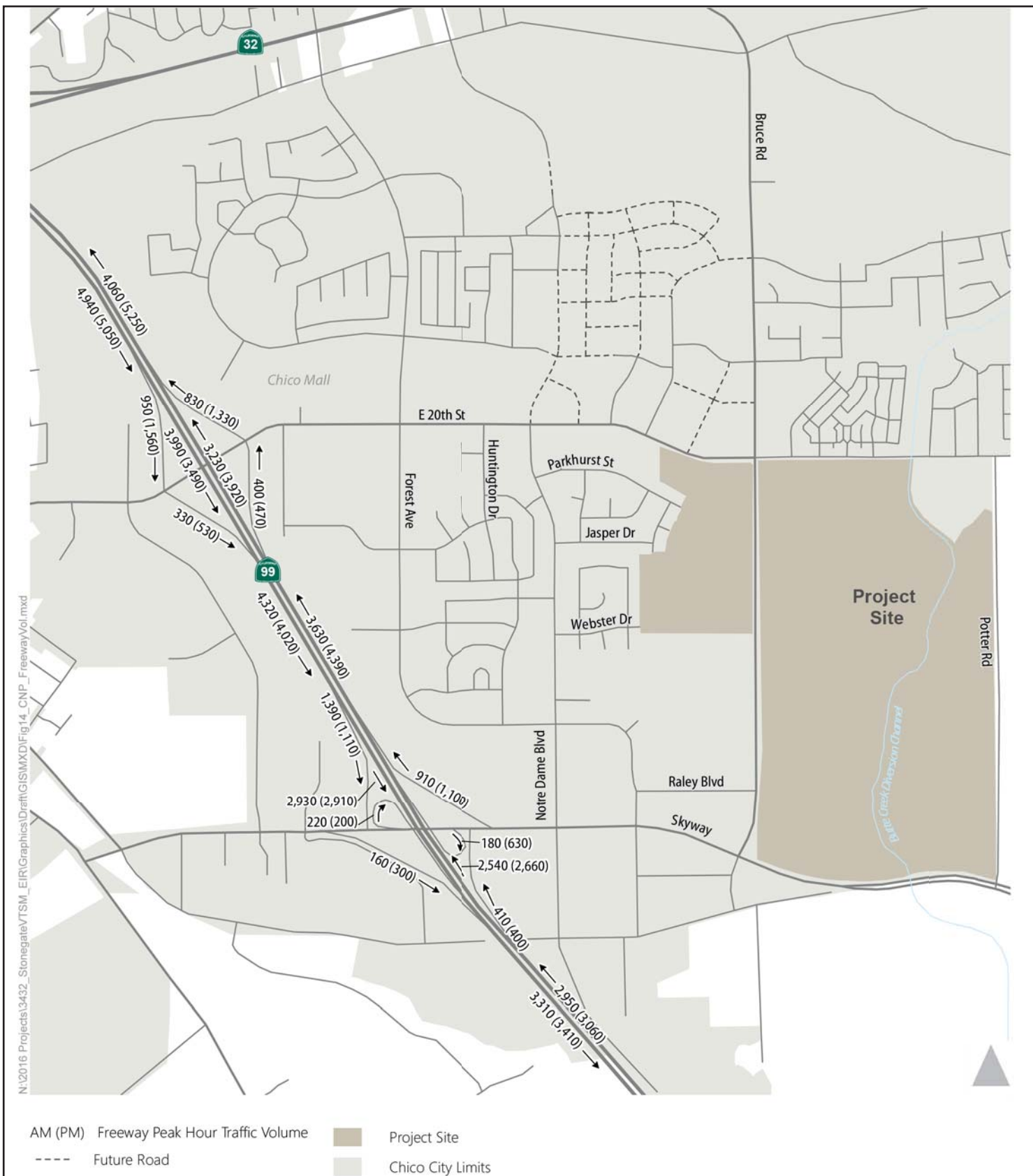


Figure IV.O-14 Cumulative No Project Freeway Volumes

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

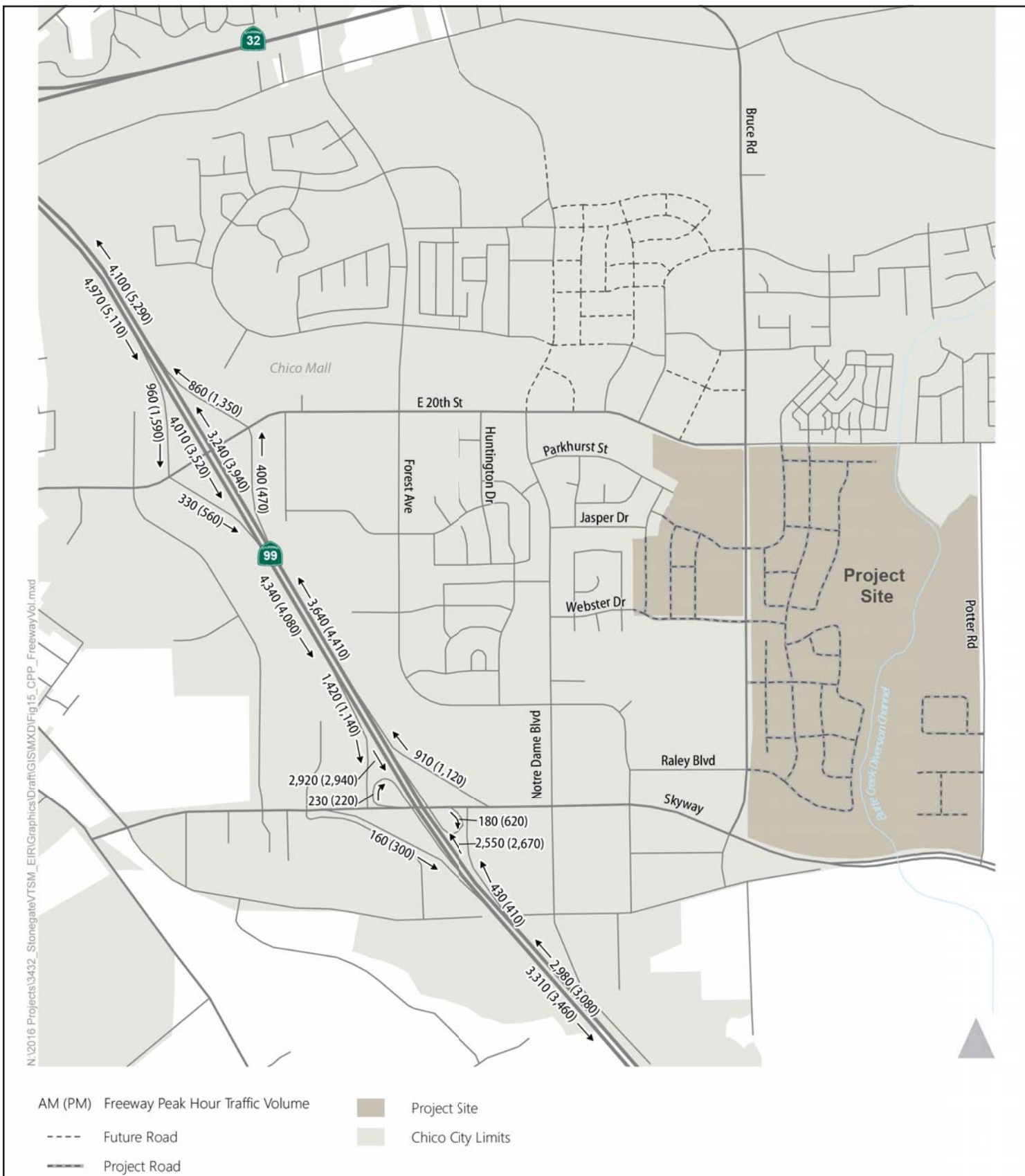


Figure IV.O-15 Cumulative Plus Project Freeway Volumes

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Date: 3/28/18  
Source: Fehr & Peers

Table IV.O-16 shows the freeway operations under Cumulative No and Plus Project.

**Table IV.O-16**  
**Freeway Operations – Cumulative Plus Project**

Freeway	Segment	Segment Type	Peak Hour	Cumulative No Project		Cumulative Plus Project	
				Density <sup>1</sup>	LOS	Density <sup>1</sup>	LOS
State Route 99 Northbound	South of Skyway	Basic	AM PM	26.5 27.8	D D	26.9 28.0	D D
	Skyway Off-Ramp	Diverge	AM PM	32.5 33.6	D D	32.8 33.8	D D
	Skyway	Basic	AM PM	22.4 23.6	C C	22.5 23.7	C C
	Skyway Loop On-Ramp	Merge	AM PM	28.2 32.7	D D	28.3 32.7	D D
	Skyway Slip On-Ramp to E 20th Street Off-Ramp	Weave	AM PM	- -	C D	- -	D D
	E 20th Street	Basic	AM PM	29.9 36.4	D E	30.0 36.8	D E
	E 20th Street On-Ramp to SR 32 Off-Ramp	Weave	AM PM	- -	D E	- -	D E
State Route 99 Southbound	SR 32 On-Ramp to E 20th Street Off-Ramp	Weave	AM PM	- -	E F	- -	E F
	E 20th Street	Basic	AM PM	42.6 33.5	E D	43.0 33.9	E D
	E 20th Street On-Ramp to Skyway Off-Ramp	Weave	AM PM	- -	E D	- -	E D
	Skyway	Basic	AM PM	26.3 26.1	D D	26.2 26.4	D D
	Skyway Loop On-Ramp	Merge	AM PM	31.2 30.6	D D	31.2 31.0	D D
	Skyway Slip On-Ramp	Merge	AM PM	32.6 33.2	D D	32.6 33.6	D D
	South of Skyway	Basic	AM PM	30.9 32.3	D D	30.9 33.0	D D
Notes:							
<sup>1</sup> Density expressed in passenger car equivalents per hour per mile per lane.							
Source: Fehr & Peers, 2017							

As shown, all freeway mainline and ramp segments operate at LOS E or better, except for the weave segment on SR 99 Southbound from SR 32 On-Ramp to E 20<sup>th</sup> Street Off-Ramp, which operates at LOS F under Cumulative No Project and Plus Project conditions. Based on the *Transportation Corridor Concept Report*, SR 99, the concept LOS F is considered acceptable conditions.

Table IV.O-17 shows the freeway off-ramp queuing under Cumulative No and Plus Cumulative Plus Project. As shown, all queues remain within the available storage with the addition of the project.

**Table IV.O-17  
Freeway Off-Ramp Queueing – Cumulative Plus Project**

Facility	Storage Length (feet)	Peak Hour	Cumulative No Project	Cumulative Plus Project
			Queue (feet)	Queue (feet)
SR 99 Southbound Off-Ramp at E. 20th St	1,350	AM PM	250 550	250 400
SR 99 Northbound Off-Ramp at E. 20th St	1,350	AM PM	275 600	225 650
SR 99 Southbound Off-Ramp at Skyway Rd	1,500	AM PM	275 450	300 350
SR 99 Northbound Off-Ramp at Skyway Rd	1,275	AM PM	300 275	225 250
Notes: Average maximum queue is calculated using an average of 10 SimTraffic runs. Storage length is measured using aerial imagery. Source: Fehr & Peers, 2017				

Due to the freeway mainline, merge, diverge, weave, and off-ramp queueing operating acceptably, this would be a **less-than-significant** impact.

With regard to cumulative impacts from the project on bicycle facilities, pedestrian facilities and transit facilities, no additional impacts have been identified under cumulative conditions beyond those identified under Impacts Transportation-3 through Transportation-5, above. With implementation of *Mitigation Measures Transportation-3, Transportation-4 and Transportation-5*, cumulative impacts from the project on bicycle facilities, pedestrian facilities and transit facilities would be reduced to a **less-than-significant** level.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

All project impacts related to transportation and traffic are **less-than-significant** after implementation of *Mitigation Measures TRANSPORTATION-1 through TRANSPORTATION-7*.



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## **IV. ENVIRONMENTAL IMPACT ANALYSIS**

### **P. UTILITIES AND SERVICE SYSTEMS**

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#### **INTRODUCTION**

This section addresses the potential utilities and service systems impacts with respect to the proposed project and includes an evaluation of the existing services provided to the project site, future needs, and the potential impacts the proposed project would have related to wastewater, water supply, stormwater, waste disposal, and energy.

#### **METHODOLOGY**

Potential project impacts on wastewater, water supply, stormwater, waste disposal, and energy systems 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. The following factors were taken into consideration for the impact analysis: (1) whether the proposed project would require construction of new facilities or expansion of existing facilities; (2) whether the proposed project would require construction of new or expansion of existing stormwater drainage facilities; (3) whether the proposed project would require new or expanded entitlements for water supply; (4) whether the proposed project would result in a determination by the wastewater treatment provider that it does not have adequate capacity to serve the project; (5) whether the proposed project would be served by a landfill with sufficient capacity to serve the project; or (6) whether the proposed project would result in the unnecessary, wasteful, or inefficient use of energy. The responsible agencies were contacted regarding potential impacts on their facilities. In addition, various utilities and service systems policies and guidelines as defined by the City of Chico ("City") were also reviewed and considered during the project impact analysis.

#### **ENVIRONMENTAL SETTING**

##### **Wastewater**

Wastewater treatment for the City is provided by the City of Chico Water Pollution Control Plant ("WPCP"), located approximately 4.0 miles southwest of the city in the western portion of Butte County. Currently, WPCP has a 12 million gallon per day ("mgd") capacity with plans to expand to 15 mgd in the future. According to the General Plan EIR, as of 2006, the average daily dry weather flow is approximately 7.2 mgd. Table 4.12.5-3 of the General Plan EIR described the project wastewater flows through the year 2025, projecting 11.8 mgd for the year 2015, 13.5 mgd for the year 2020, and 15.2 mgd for the year 2025. The WPCP treats wastewater flows to a "secondary" level, making it suitable for the irrigation pasture land, food crops in which the edible portion does not come in contact with the water, and areas of restricted public access.

The General Plan EIR acknowledges that additional wastewater treatment and infrastructure capacity improvements would be needed to serve future development.

**Stormwater**

Storm drainage management within the City is provided by a system of developed and undeveloped collection systems operated and maintained by the City and Butte County. As the project site is currently undeveloped, storm drainage and runoff in the area is managed by unpaved shoulders, roadside swales, and naturally occurring drainages. The storm drainage system in the surrounding developed area consists of primarily drop inlets located along streets. Water in the system is transported to outfall locations located along the major creeks including Sycamore, Mud, Comanche, Big Chico, and Little Chico Creeks and Lindo Channel.

**Water Supply**

Water service is provided to the area surrounding the project site by the Chico District of the California Water Service Company ("Cal Water"). Determining the actual supply available to Cal Water in any given year is complicated by several factors. There has not been a comprehensive hydrogeologic investigation of the basin to define its safe yield, nor has there been a legal adjudication of groundwater rights for basin pumpers. This is partly due to the relative abundance of groundwater resources in this region of the Sacramento Valley. Although there has been a general decline on groundwater levels over the long term, this decline has not been significant enough to warrant immediate concern. The aquifers beneath the Chico-Hamilton City District contain large volumes of stored groundwater, and groundwater levels have recovered quickly after past drought events.

Because of the difficulty in defining an exact supply quantity available to the Chico District, the theoretical supply could be considered the amount that Cal Water has the ability to pump. The design capacity of all the active wells is currently 90,288 acre-feet/year. A more conservative estimate may be 80 percent of this capacity, which is 72,230 acre-feet/year. However, this value greatly exceeds the projected water usage, and it may be unrealistic to characterize the available supply. Cal Water recognizes the need for responsible management of groundwater resources and is committed to implementing conservation programs to minimize its pumping in the basin, and will remain supportive of the management efforts of Butte and Glenn Counties. Cal Water only pumps enough water to meet the needs of its customers. The projected water supply source and volume for the City is summarized in Table IV.P-1.

**Table IV.P-1. Water Supply Projections**

Water Source	Acre-Feet/Year					
	2016	2020	2025	2030	2035	2040
Groundwater	31,978	29,397	32,162	33,981	35,916	37,974
Source: City of Chico General Plan DEIR						

### Waste Disposal

Residential and commercial recycling and garbage collection, debris box service, and compactor service for residents and businesses within the City of Chico are provided by two companies, Recology Butte Colusa Counties and North Valley Waste Management (“NVWM”). The majority of solid waste generated in the City of Chico is disposed of at the Neal Road Sanitary Landfill, which is owned by Butte County and operated by the Butte County Public Works Department.<sup>1</sup> According to the Draft EIR for the 2030 Chico General Plan, the Neal Landfill has a remaining capacity of 85.9% and the landfill is expected to operate until 2033 accommodating a 2.5% to 3.5% annual increase in waste due to anticipated growth in Chico and Butte County.

### Energy

Pacifica Gas & Electric (“PG&E”) is the primary electricity and natural gas provider to the northern and central parts of California including the City of Chico. PG&E, which is regulated by the California Public Utilities Commission, provides electricity to all or part of the 47 counties in California, including Butte County. PG&E charges connection and user fees for all new development, and sliding use-based rates for electrical and natural gas service. In 2014, PG&E obtained 35.8 percent of electricity from its own generation sources and the remaining 64.2 percent from outside sources. PG&E-owned generating facilities include nuclear, natural gas, and hydroelectric, with a net generating capacity of more than 7,684 megawatts. Outside suppliers to PG&E include California Department of Water Resources, irrigation districts, renewable energy suppliers, and other fossil fuel-fired suppliers. PG&E operates approximately 141,700 circuit miles of transmission and distribution lines. PG&E is interconnected with electric power systems in the western Electricity Coordinating Council, which includes 14 western states; Alberta and British Columbia, Canada; and parts of Mexico. In 2014, PG&E delivered 86,303 gigawatt-hours of electricity to its 5.3 million electrical customers.

<sup>1</sup> CalRecycle. Facility/Site Summary Details: Neal Road Recycling and Waste Facility (04-AA-0002). Available at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/04-AA-0002/Detail/>. Accessed August 2016.

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. PG&E obtains its natural gas supplies from western North America, including basins in western Canada, the Rocky Mountains, the southwestern United States, and California. 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"). In 2014, PG&E delivered 269 Bcf of natural gas to its 4.4 million natural gas customers.

## REGULATORY SETTING

### Federal

*United States Environmental Protection Agency (U.S. EPA)*

#### Clean Water Act

The federal 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 (“WPD”) 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.

### State

#### *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 State Water Resources Control Board (“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.<sup>2</sup>

The Region 5 (Central Valley) RWQCB office has jurisdiction over of Butte County and includes the Sacramento River and San Joaquin River, two of the State’s major rives, that drain in the

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<sup>2</sup> *United States Department of Energy, Porter-Cologne Water Quality Control Act, Accessed at: <http://www.etec.energy.gov/Regulation/Porter-Cologne-Water-Quality-Control-Act.htm>. April 22, 2008.*

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 2009*

The California Water Plan is the state’s guidance document for integrated water management and sustainability, and the California Department of Water Resources (“DWR”) updates this Plan every five years. The most recent update in 2009 provides a statewide strategic plan until the year 2050. Two major initiatives of the California Water Plan include: (1) integrated regional water management that enables regions to implement strategies appropriate for their own needs and helps them become more self-sufficient, and (2) 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, 2009).

#### *California Urban Water Management Planning Act*

California Water Code Sections 10610-10656 established the Urban Water Management Planning Act, requiring all urban water suppliers prepare urban water management plans and updated them every five years. Cal Water adopted an Urban Water Management Plan for the Chico District in 2007.

#### *Model Water Efficient Landscape Ordinance*

The Model Water Efficient Landscape Ordinance was adopted by the Office of Administrative Law in September 2009, and requires local agencies to implement water efficiency measures as part of its review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the ordinance into its own code requirements for landscaping. For new landscaping projects of 2,500 square feet or more, the applicant is required to submit a detailed “Landscape Documentation Package” in conjunction with their building permits that discusses water efficiency, soil management, and landscape design elements.

#### *California Public Utilities Commission*

The California Public Utilities Commission (CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to: (1) assure California utility customers safe, reliable utility service at reasonable rates; (2) protect utility customers from fraud; and (3) promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.

### *California Integrated Waste Management Act*

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill (AB) 939, the California Integrated Waste Management Act of 1989, effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent by 1995 and 50 percent by 2000; established a comprehensive statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, Senate Bill (SB) 1016, Wiggins, Chapter 343, Statutes of 2008, introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities.

### *Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings*

Title 24, Part 6, of the California Code of Regulations establishes California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The current standards were updated in 2013 and went into effect on July 1, 2014. The Energy Commission is now in the process of developing the 2016 Standards, which will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2016 Standards will go into effect on January 1, 2017. The 2013 standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year. The savings attributable to new nonresidential buildings are 151.2 GWh/y of electricity savings and 3.3 million therms. For nonresidential buildings, the standards establish minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., heating, ventilation, and air conditioning [HVAC]; and water heating systems), indoor and outdoor lighting, and illuminated signs.

## **Local**

### *2015 Urban Water Management Plan, Chico-Hamilton District*

The 2015 UWMP, Chico-Hamilton District, is a foundation document and source of information for Water Supply Assessments and Written Verifications of Water Supply. The 2015 UWMP provide long-range planning for water supply and source data for development of a regional plan and city and county general plans. The plan includes descriptions of water sources, a water shortage contingency plan, water use provisions, and a supply and demand comparison.

### *City of Chico Storm Water Management Program*

The purpose of the SWMP is to present a program that is consistent with Federal and State regulations and to meet permitting requirements that will prevent pollutants from entering into the storm drainage system. The objectives of the SWMP are to provide guidance to the public

and businesses, and act as a coordinating entity towards a cohesive storm water program. The SWMP is a comprehensive program comprised of various elements and activities designed to reduce storm water pollution to the maximum extent possible and eliminate prohibited non-storm water discharge in accordance with Federal and State laws and regulations. These laws and regulations are implemented through NPDES municipal storm water discharge permits.

#### *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 wastewater, stormwater, water supply, and waste disposal are included below. For a discussion of project consistency with additional applicable land use policies please refer to Section IV.J (Land Use and Planning), of this Draft EIR.

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.

Policy PPFS-4.4 (Wastewater Flows) – Ensure that total flows are effectively managed within the overall capacity of the Water Pollution Control Plant.

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.

Policy PPFS-5.3 (Water Conservation) – Work with Cal Water to implement water conservation management practices.

Policy PPFS-6.2 (Storm Water Drainage) – Continue to implement a storm water drainage system that results in no net increase in runoff.

Policy PPFS-6.3 (Storm Water Drainage BMPs) – To protect and improve water quality, require the use of Best Management Practices (BMPs) for storm water drainage infrastructure suited to the location and development circumstances.

Policy PPFS-6.4 (Water Runoff) – Protect the quality and quantity of water runoff that enters surface waters and recharges the aquifer.

Policy PPFS-8.1 (Waste Recycling) – Provide solid waste collection services that meet or exceed state requirements for source reduction, diversion, and recycling.

Policy S-4.3 (Fire Safety Standards and Programs) – Support the development and implementation of standards and programs to reduce the fire hazards and review development and buildings applications for opportunities to ensure compliance with relevant codes.

Policy SUS-3.3 (Municipal Waste Reduction) – Reduce consumption and increase recycling and reuse of materials in City operations.

Policy OS-3.3 (Water Conservation and Reclamation) – Encourage water conservation and the reuse of water.



## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on the Appendix G, Environmental Checklist Form, of the State *CEQA Guidelines*, the project would have a significant impact on the environment related to wastewater if it would:

- (a) exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- (b) require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- (c) require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- (d) have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- (e) result in a determination by the wastewater treatment provider that 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;
- (f) be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- (g) comply with federal, state, and local statutes and regulations related to solid waste; or
- (h) result in inefficient, wasteful, or unnecessary consumption of energy?

### Utilities and Service Systems Issues not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of this Draft EIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Comply with Federal, State, and Local Statutes and Regulations Related to Solid Waste

### Project Impacts and Mitigation Measures

#### *Impact UTIL-1      Wastewater Treatment Capacity*

The City of Chico would serve the site upon construction of the proposed project. Wastewater generation was calculation on the assumptions that (1) single family resident produces 288 gallons per equivalent dwelling unit (EDU) unit per day of wastewater, (2) one unit of multi-family residential is equivalent to 0.63 Edu, and (3) all other non-residential uses produced 1,500 gallons of wastewater per acre. Table IV.P-2 summarizes the wastewater generation estimate for the proposed project.

**Table IV.P-2. Wastewater Generation Estimate**

<b>Wastewater Source</b>	<b>Unit</b>	<b>gal/day</b>
Single Family Residences	469 EDU	135,072
Multi-Family Residential Units	147 EDU	42,336
Southern Commercial	4.7 Acres	7,050
Northern Commercial	5.5 Acres	8,250
Landscape Irrigation	11.5 Acres	17,250
<b>Total gal/day</b>		<b>209,958</b>
<b>Total mgd</b>		<b>0.2099</b>
Notes: 288 gallons per equivalent dwelling unit (EDU) unit per day for residential units, 1 Multi-Family is equal to 0.63 EDU, 1,500 gallons per acre per day Source: City of Chico General Plan DEIR		

The Chico treatment plant has a capacity to treat 9.0 mgd but currently receives 7.0 mgd from Cal Water's Chico service area. The net increase of 0.2099 mgd attributable to the proposed project represents a little more than three (3) percent of flows received from the Cal Water service area (7.0 mgd), and would not exceed the capacity of the treatment plant. Therefore, this is a less than significant impact.

#### *Impact UTIL-2      Water Supply*

Cal Water would supply the project site with potable water service during operation. The following assessment is based up on a Water Supply Assessment (WSA) performed by Cal Water in accordance with California SB 610. The WSA can be found in Appendix G of this DEIR. An SB 610 WSA must address the adequacy of the water supply to meet estimated demands of the proposed project over the next 20 years in addition to those of Cal Water's existing customers and other anticipated future users under normal, single dry year and multiple dry year conditions (Water Code §10911(a)). SB 610 and SB 221 require that the information developed to address the adequacy of the water supply question be included in the administrative record that serves as the evidentiary basis for an approval action by the local public agency.

As state in Section III (Project Description), the following development assumptions were utilized:

1. 469 Single Family Lots – including irrigated landscaped areas
2. 233 Units of Multi-family dwelling units
3. up to 205,000 square feet of medical/dental offices may be developed on Lot 472
4. up to 240,000 square feet of commercial mixed uses may be constructed on Lots 471 and 474

Table IV.P-3 summarizes the potable water consumption estimate for the proposed project.

**Table IV.P-3. Potable Water Consumption Estimate**

Water Use Type	gal/day	acre-feet/year (AFY)
Single Family Residences	163,775	183.5
Multi-Family Residential Units	9,623	10.8
Southern Commercial	29,664	33.2
Northern Commercial	85,920	96.2
Landscape Irrigation	20,038	22.4
<b>Total AFY</b>		<b>346.1</b>
Note: 1 acre-foot = 325,851 gallons		
Source: California Water Service Company, 2017.		

Cal Water adopted its current CH District UWMP in June 2016. Per Section 10910(c) (3) of the Water Code, the water supply assessment is based on information contained in the UWMP, updated water demand data for 2016, 2017 and other sources cited within it. Cal Water concluded in their WSA that the CH District supplies are adequate to meet forecasted demands for the proposed project, those associated with existing Cal Water customers, two major developments - Meriam Park and Oak Valley and increases in demand due to some customer relaxation of water conservation practices for the next 20+ years. Furthermore, the project could meet water supply demands under normal, single dry year and multiple dry year conditions. Impacts would be less than significant.

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*Impact UTIL-3      Drainage Facilities*

Development of subdivisions on APNs 002-190-041, 018-510-009, and 018-510-008 would remove the braided network of intermittent streams observed on the west and northwest side of the project site. Stormwater runoff would be piped through these subdivisions and discharged to existing storm drains along Fremont Street, Bruce Road, and Skyway Road. The City's existing storm drain system conveys runoff to Comanche Creek, about 1.0 mile southwest of the project site.

Stormwater runoff from development of the proposed RS-20 lots on APN 018-510-007 would be piped through the associated streets and discharged to the Butte Creek Diversion Channel. As a result, project operations could potentially increase the rate, volume, and/or duration of stormwater discharges into the Butte Creek Diversion Channel, which could contribute to stream channel hydromodification downstream of the project site in Butte Creek.

The proposed project would be required to comply with the Construction General Permit, which requires preparation and implementation of a SWPPP, including BMPs to reduce and eliminate sediment during construction activities. The proposed project would also be required to comply with the Small MS4 General Permit during operational activities, which requires implementation of post-construction stormwater management measures, such as LID design standards to capture and treat runoff from impervious surfaces. While compliance with the Small MS4 General Permit would ensure that the rate, volume, and/or duration of stormwater discharges would not substantially increase during operations, the stormwater discharges into the Butte Creek Diversion Channel would be more concentrated at new storm drain connections, which could result in localized erosion of the channel near the points of discharge. Therefore, alteration of the existing drainage patterns into the channel and encroachment on the levee could result in need runoff to downstream waterways that necessitate a need to construct new or expanded storm drainage facilities.

Furthermore, portions of the project site along the Butte Creek Diversion Channel, Crouch Ditch, and unnamed streams on the northwest and southeast sides of the project site are mapped within a FEMA 100-year flood zones (Figure 1). The proposed project would change the existing topography and place structures within the FEMA 100-year flood zones, which could increase the extent, depth, and velocity of flood flows relative to existing conditions. This could result in a substantial increase in erosion and downstream siltation during a 100-year flood event. Implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2* would reduce potentially significant impacts related to erosion and siltation from altered drainage patterns to a less-than-significant level.

*Impact UTIL-4      Landfill Capacity*

This impact assesses the potential for the proposed project to generate substantial amounts of solid waste that result in inadequate landfill capacity or conflict with statutes or regulations concerning solid waste.

### Construction Waste

The proposed project would result in the construction of up to 445,000 square feet of new commercial uses. Using a non-residential construction waste generation rate published by the United States Environmental Protection Agency, an estimate of the total construction debris generated by the proposed project is provided in Table IV.P-4.

**Table IV.P-4. Construction Solid Waste Generation**

Land Use Type	Square Feet	Waste Generation Rate	Waste Generation	
			Tons	Cubic Yards
Non-residential	445,000	3.89 pounds/square foot	865.5	1211.7
Single-Family	844,200	4.38 pounds/square foot	1,848.8	2,588.3
Multi-Family	233,000	3.89 pounds/square foot	453.2	634.5
<b>Total</b>				<b>4,434.5</b>
Notes: Single Family Home estimated at 1,800 square feet. Multi-Family unit assumed to be 1,000 square feet 1 ton= 2,000 pounds, 1 ton = 1.4 cubic yards Source: U.S. Environmental Protection Agency, 1998				

Development of the proposed project would generate an estimated 4345.5 cubic yards of construction debris. This waste volume represents less than 0.02 percent of the 20.8 million cubic yards in available capacity at the Neal Road Recycling and Waste Facility. Therefore, short-term construction impacts on landfill capacity would be less than significant.

### Operational Waste

Table IV.P-5 summarizes the proposed project's operational waste generation based on rates provided by Cal Recycle. After accounting for existing waste generation, the proposed project would result in a usage of 2,259.8 cubic yards of solid waste on an annual basis.

**Table IV.P-5. Operational Solid Waste Generation**

Land Use Type	Square Feet	Waste Generation Rate	Waste Generation	
			Tons	Cubic Yards
Non-residential construction	445,000	4.8 pounds/square foot	1068	1,495.2
Single-Family	469	10 lb/dwelling unit /day	855.9	1,198.3
Multi-Family	233	4 lb/dwelling unit /day	170.09	238.3
<b>Total</b>				<b>2,931.8</b>
Notes: 1 ton= 2,000 pounds, 1 ton = 1.4 cubic yards Source: U.S. California Department of Resources Recycling and Recovery, 2006				

The proposed project's net increase in operational waste generation represents less than 0.01 percent of the 20.8 million cubic yards in available capacity at the Neal Road Recycling and Waste Facility. Moreover, the values shown in the table are not adjusted to account for recycling and waste reduction activities that would serve to divert waste from the landfill. Therefore, long-term operational impacts on landfill capacity would be less than significant.

*Impact UTIL-6                  Energy Usage*

PG&E would provide electricity and natural gas service to the proposed project. Tables IV.P-6 and IV.P-7 provide an estimate of the proposed project's annual energy consumption for both residential and commercial uses. The estimated electricity and natural gas consumption of the proposed project includes the assumed maximum developed of 469 single family homes, 233 multi-family residential units, 205,000 square feet (sf) of southern commercial development, and 240,000 sf of northern commercial development. Annual energy consumption for the proposed project was estimated utilizing the average energy consumption for the region data provided by the U.S. Energy Information Administration.

**Table IV.P-6. Site Energy Consumption for Residential**

<b>Land Use Type</b>	<b>Average Annual Electricity (kWh)</b>	<b>Estimated Annual Electricity Consumption (kWh)</b>	<b>Average Annual Natural Gas (cf)</b>	<b>Estimated Annual Natural Gas Consumption (cf)</b>
Single Family Residences	11,013	5,165,097	59,000	27,671,000
Multi-Family Residential Units	5,280	1,230,240	23,000	5,359,000
Source: U.S. Energy Information Administration. 2013. Table CE2.5 Household Site Fuel Consumption in the West Region.				

**Table IV.P-7. Site Energy Consumption for Commercial**

Land Use Type	Average Annual Electricity (kWh/sf)	Estimated Annual Electricity Consumption (kWh)	Average Annual Natural Gas (cf/sf)	Estimated Annual Natural Gas Consumption (cf)
Southern Commercial	15.8	3,239,000	19.6	4,018,000
Northern Commercial	14.9	3,576,000	13.2	3,168,000
Source: U.S. Energy Information Administration. 2016. Table C19. Electricity Consumption and Conditional Energy Intensity by Census Division. U.S. Energy Information Administration. 2016. Table C29. Natural Gas Consumption and Conditional Energy Intensity by Census Division.				

Based on the information shown in Tables IV.P-6 and IV.P-7 above, the proposed project is estimated to demand a net total of approximately 13,210,337 kWh of electricity and 40,216,000 cubic feet of natural gas annually after full project buildout. As stated above, PG&E delivered 86,303 gigawatts of electricity and 269 billion cf of natural gas in 2014. Therefore, the proposed project would result in 0.015% of PG&E's total annual electricity usage and 0.015% of PG&E's total annual natural gas usage. Additional construction and operational energy use and conservation is provided in Section VI. (General Impact Categories) of this Draft EIR.

All new residential and non-residential development would be subject to the latest adopted edition of the Title 24 energy efficiency standards, which are among the most stringent in the U.S. As such, the proposed project would not result in the unnecessary, wasteful, or inefficient use of energy. Impacts would be less than significant.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2*, as listed in Section IV.I (Hydrology & Water Quality), would reduce project impacts related to stormwater drainage to a **less-than-significant** level. Impacts related to wastewater, water supply, solid waste, and energy use would be **less than significant**.

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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### Q. TRIBAL CULTURAL RESOURCES

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#### INTRODUCTION

This section of the DEIR evaluates potential impacts to tribal cultural resources that may result from implementation of the Stonegate Vesting Tentative Subdivision Map and General Plan Amendment / Rezone ("proposed project"). The information and analysis in this section is based on the following cultural resources reports prepared for the proposed project, which are included in Appendix E of this Draft EIR:

- Far Western Anthropological Research Group, Inc. (Far Western), Archaeological Survey and Extended Phase I Report for the Stonegate Subdivision Project, Butte County, California, June 2017
- ECORP Consulting, Inc., Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, August 2017
- Sub Terra Consulting, Archaeology and Paleontology, Peer review of Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, November 2017

#### Methodology

Far Western conducted cultural resources studies for a subdivision, general plan amendment and rezoning of the proposed project in southeast Chico. These studies included an archival records search at the Northeast Information Center at Chico State University, a buried site sensitivity analysis, Native American and Historical Society consultation, and an intensive pedestrian survey.

A letter was sent to the Native American Heritage Commission (Commission) on July 8, 2016, requesting a review of the Sacred Lands file and a list of interested Native American tribes and individuals. On July 13, 2016, the Commission responded indicating that they have no knowledge of Native American resources within the Project site and providing a list of five individuals/organizations to contact. Letters were sent to these individuals/organizations on July 26, 2016, requesting information on the project area and soliciting comments on the proposed project.

## ENVIRONMENTAL SETTING

In September 2014, the California Legislature passed Assembly Bill (“AB”) 52, which added provisions to the Public Resources Code (“PRC”) concerning the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze a project’s impacts on “tribal cultural resources,” separately from archaeological resources (PRC Section 21074; 21083.09). Under AB 52, “tribal cultural resources” include “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” that are either (1) listed, or determined to be eligible for listing, on the state or local register of historic resources; or (2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource (PRC Section 21074). AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, 21082.3). If a project may have a significant impact on a tribal cultural resource, the lead agency’s environmental document must discuss (1) whether the proposed project has a significant impact on an identified tribal cultural resource and (2) whether feasible alternatives or mitigation measures avoid or substantially less the impact on the identified tribal cultural resource (PRC Section 21082.3(b)). Finally, AB 52 required the Office of Planning and Research to update Appendix G of the CEQA Guidelines by July 1, 2016 to provide sample questions regarding impacts to tribal cultural resources (PRC Section 21083.09). AB 52’s provisions apply to projects that have a notice of preparation filed on or after July 1, 2015.

## REGULATORY SETTING

### Federal

#### *National Historic Preservation Act*

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. As stated by 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets at least one of the following criteria:

- Association with significant events in history, or broad patterns of events.
- Association with significant people in the past.
- Embodiment of distinctive characteristics of an architectural type, period, or method of construction; or work of a master or possesses high artistic value; or representation of a significant and distinguishable entity whose components may lack individual distinction.
- Has yielded, or may yield, information important in history or prehistory.

Properties including religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are typically excluded from consideration for listing in the NRHP; however, they can be considered if they meet special requirements in addition to meeting the criteria listed above.

### State

#### *Tribal Consultation*

#### SB-18 Tribal Consultation

SB-18 Tribal Consultation; Government Code Section 65352.3 (Senate Bill [SB] 18) 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 or amendment of a general plan or specific plan. The purpose of this consultation is to preserve or mitigate impacts to cultural places.

#### AB-52 Tribal Cultural Resources

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the Public Resources Code concerning the evaluation of impacts on Tribal Cultural Resources (TCRs) under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze a project's impacts on "tribal cultural resources," separately from archaeological resources (PRC Section 21074; 21083.09). The Bill defines "tribal cultural resources" in a new section of the PRC, Section 21074. AB 52

also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, 21082.3). Finally, AB 52 requires the Office of Planning and Research to update Appendix G of the CEQA Guidelines by July 1, 2016 to provide sample questions regarding impacts to tribal cultural resources (PRC Section 21083.09). AB 52's provisions apply to projects that have a notice of preparation filed on or after July 1, 2015.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

1. Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:
  - a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
  - b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

- a. A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and
- b. A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a TCR if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

**Local***City of Chico Municipal Code*Historic Preservation Ordinance

A historic preservation ordinance of the Chico Municipal Code specifically affords protection for properties listed on the City's Historic Resources Inventory and provides a mechanism to add historic properties to the Inventory through Landmark Overlay zoning districts. The ordinance also provides development incentives to owners of designated historic property and establishes a number of exempt activities such as ordinary maintenance and repair. Proposals to significantly alter or demolish structures listed on the City's Historic Resources Inventory are reviewed by the City's five-member Architectural Review and Historic Preservation Board. The Board also reviews nominations to the City's Inventory and forwards recommendations to the City Council for a final determination of listing.

*City of Chico General Plan*

Policy CRHP-1.1 (Historic Preservation Program) – Maintain a comprehensive Historic Preservation Program that includes policies and regulations which protect and preserve the archaeological, historical, and other cultural resources of Chico.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, a project would have a significant impact on cultural resources if the project would:

- (a) 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 and Mitigation Measures

*Impact TCR-1: The proposed project would cause a significant adverse change in a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).*

Criteria for listing on the California Register of Historical Resources is described in Section IV.E (Cultural Resources). In accordance with AB-52, a letter was sent to the Native American Heritage Commission ("Commission") on July 8, 2016, requesting a review of the Sacred Lands file and a list of interested Native American tribes and individuals. On July 13, 2016, the Commission responded indicating that they have no knowledge of Native American resources within the project site and provided a list of five individuals/organizations to contact. Letters were sent to these individuals/organizations on July 26, 2016, requesting information on the project area and soliciting comments on the proposed project. Michael DeSpain from the Mechoopda Indian Tribe called on August 8, 2016, to discuss the high sensitivity for archaeological sites near creeks and other waterways and requested that tribal monitors be present during future ground-disturbing activity, including coring. He also referred to the archaeological sensitivity map included within the current general plan<sup>1</sup>. This map of Prehistoric

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<sup>1</sup> City of Chico Archaeological Sensitivity Map. 2009

Archaeological Sensitivity was developed by the Mechoopda Indian Tribe of Chico Rancheria and includes the project site. While the northwestern portion of the project, west of Bruce Road, is considered to have Medium Sensitivity, the majority of the project site east of Bruce Road is considered to be an area of High Sensitivity. No other comments were received from interested Native American parties. *Mitigation Measure CULT-2* would require the Applicant to provide reasonable notification and access to the site for a Mechoopda Tribe-designated monitor during ground-disturbing activities, and requires halting construction activities pending a professional evaluation of any resources discovered during grading operations. With implementation of *Mitigation Measure CULT-2* the project would have a **less than significant** impact regarding an adverse change to a tribal cultural resource.

*Impact TCR-2: The proposed project would cause a significant adverse change in 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, the lead agency shall consider the significance of the new resource to a California Native American tribe.*

As stated above, letters were sent to these individuals/organizations on July 26, 2016, requesting information on the project area and soliciting comments on the proposed project. Michael DeSpain representing the Mechoopda Indian Tribe called on August 8, 2016, to discuss the high sensitivity for archaeological sites near creeks and other waterways and requested that tribal monitors be present during future ground-disturbing activity, including coring. He also referred to the archaeological sensitivity map included within the current general plan<sup>2</sup>. No other comments were received from interested Native American parties. With implementation of *Mitigation Measure CULT-2* the project would have a **less than significant** impact regarding an adverse change to a significant resource as defined under subdivision (c) of Public Resources Code Section 5024.1.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of *Mitigation Measure CULT-2* would reduce significant project impacts on tribal cultural resources to a **less-than-significant** level.

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<sup>2</sup> City of Chico Archaeological Sensitivity Map. 2009

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## V. CUMULATIVE EFFECTS

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### INTRODUCTION

CEQA Guidelines Section 15130 requires the consideration of cumulative impacts within an EIR when a project's incremental effects are cumulatively considerable. Cumulatively considerable means that "...the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In identifying projects that may contribute to cumulative impacts, the CEQA Guidelines allow the use of a list of past, present, and reasonably anticipated future projects, producing related or cumulative impacts, including those which are outside of the control of the lead agency.

In accordance with CEQA Guidelines Section 15130(b), "...the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone." The discussion should be guided by standards of practicality and reasonableness, and it should focus on the cumulative impact to which the identified other projects contribute rather than on the attributes of other projects that do not contribute to the cumulative impact. The proposed project's cumulative impacts were considered in conjunction with build-out of the City of Chico's 2030 General Plan. However, the 2030 General Plan assumes a 15% buildout of the project site, while the proposed project would result in buildout of approximately 65% of the project site. Therefore, the cumulative impact analysis provided below lists the impact conclusions of the General Plan EIR, but factors in this inconsistency when determining cumulative impacts of the proposed project with full buildout of the General Plan.

### CUMULATIVE IMPACT ANALYSIS

The cumulative impact analysis below is guided by the requirements of CEQA Guidelines Section 15130. Key principles established by this section include:

- A cumulative impact only occurs from impacts caused by the proposed project and other projects. An EIR should not discuss impacts that do not result from the proposed project.
- When the combined cumulative impact from the increment associated with the proposed project and other projects is not significant, an EIR need only briefly explain why the impact is not significant; detailed explanation is not required.

- An EIR may determine that a project's contribution to a cumulative effect impact would be rendered less than cumulatively considerable if a project is required to implement or fund its fair share of mitigation intended to alleviate the cumulative impact.

The cumulative impact analysis that follows relies on these principles as the basis for determining the significance of the proposed project's cumulative contribution to various impacts.

### **Aesthetics**

The geographic scope of the cumulative aesthetic, light, and glare analysis is the area surrounding the project site. This is considered the areas within view of the project site, and therefore, the areas most likely to experience changes in visual character or experience light and glare impacts. The area surrounding the project site is characterized by urban development, including single and multi-family residences to the north, single-family residences to the west, commercial land to the south, and an industrial use to the southeast. East of the project site is privately owned rangeland and open space that slopes gently up in elevation to rolling foothill terrain. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in significant and unavoidable impacts to visual character. The proposed project would have a less than significant impact on the existing visual character or quality of the site and its surroundings. The proposed project would be subject to design review by the City of Chico, which would ensure compatibility with the existing visual character. Furthermore, the project includes 108-acres of permanent open space along its eastern boundary. This open space is consistent with the privately owned rangeland that it abuts.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to scenic vistas. The proposed project would be less than significant impacts impact on scenic vistas.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in no impact to scenic resources within a state scenic highway, similar to the proposed project.

As the project site is currently undeveloped, there are no existing light and glare impacts within the area. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to light and glare. The proposed project would also have a less-than-significant impact related to light and glare. All lighting would comply with CNC 19.60.050, except for single-family residential uses, which is exempt from design review (unless approved with a planned development permit). Lighting design of all other uses is subject to discretionary review and approval by the City planning staff of the City's Architectural Review & Historic Preservation Board, in accordance with policies of the Community Design Element of the General Plan, and Guidelines of the City of Chico Design Guidelines Manual. All local and state requirements concerning lighting would be followed. While the General Plan EIR did not account for the level of development proposed for the project site, as the areas surrounding the project site are currently developed, cumulative impacts from light and glare would be less than significant.

Therefore, impacts from the proposed project with buildout of the General Plan related to aesthetics, light, and glare are **not cumulatively considerable**.

### Air Quality

Air pollution, by nature, is mostly a cumulative impact. The significance thresholds applicable to construction and operational aspects of a project represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the region's air quality conditions as determined by the BCAQMD.

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 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 NO<sub>x</sub>) which exceed the BCAQMD's thresholds of significance. Calculation of the payment is based on the Carl Moyer Program's most recent cost effectiveness level per ton, which as of 2017 was \$18,260 per ton and can be found at <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

The BCAQMD CEQA Handbook states that the payment amount shall be calculated at the time of recordation of the final map for residential projects or occupancy of commercial projects, and shall be calculated using CalEEMod or an equivalent tool approved by BCAQMD that includes emission reductions from all project design features and mitigation. Project emissions above the pound per day threshold are converted to tons per year and then divided by the daily-to-annual equity ratio of 5.5 to obtain an equivalent tons per year value. The excess tons per year emissions are then multiplied by 25 years (to represent the project life span) and the most current cost-effectiveness level per ton from the Carl Moyer Program. BCAQMD staff has clarified that although it is not reflected in the 2014 CEQA Handbook, it is the BCAQMD's practice to use a 180 day ozone season when calculating the emissions that are required to be reduced for ozone precursors. In the calculations, this would replace 365 days with 180 days.

Based on the current calculations (35.9 pounds ROG + 35 pounds NO<sub>x</sub> + 6.3 pounds PM10= 77.2 pounds/day x 180/2,000 = 6.95 tons/year/5.5 = 1.16 x 25 x \$18,260 = \$576,684), this would result in a payment of \$576,684.00 to the Off-site Mitigation Program, which would be utilized by the BCAQMD for a variety of emission reduction programs located throughout the Air District. *Mitigation Measure AIR-2C/GHG-1* requires the project applicant to participate in an Off-site Mitigation Program in order to reduce ROG and NO<sub>x</sub> operational emissions to less than significant levels, consistent with the BCAQMD's CEQA Handbook and current practices. Therefore, with implementation of *Mitigation Measure AIR-2C/GHG-1*, the operational criteria pollutant emissions would be **less than cumulatively considerable** contribution to air quality impacts.

## Biological Resources

The geographic scope of the cumulative biological resources analysis is the region surrounding the project site. The project site is currently undeveloped and provides habitat for several special-status species. Recent development patterns and anticipated future growth in the Chico region is considered an existing cumulatively significant impact to biological resources due to the loss of potential habitat for rare species. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to special-status plant or animal species. However, this conclusion does not consider the increased development of the site that would occur as a result of the proposed project. The proposed project would have a potentially significant impact related to the loss of habitat for nesting birds, pallid bat, western spadefoot, vernal pool crustaceans, Valley Elderberry Longhorn Beetle, and Butte County Meadowfoam. The proposed project would have a less-than-significant impact with *Mitigation Measures BIO-1A, BIO-1B, BIO-1C, BIO-1D, BIO-1E, BIO-2A, and BIO-2B* on special-status plant or animal species. Project-related biological impacts are considered and mitigated consistent with local, state and federal regulations, which includes compliance with “no net loss” of acreage and values policies of the state and federal agencies. The required mitigation would reduce the project’s contribution to any significant cumulative impact on special-status plant and wildlife species to ***less than cumulatively considerable***.

The proposed project would have potentially significant impacts related to the loss of sensitive natural communities including Mixed Riparian Woodland, wetlands, and other aquatic resources (e.g. drainages). Impacts would be reduced to less than significant with the implementation of *Mitigation Measures BIO-3A and BIO-4*. The proposed project would have The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to wetlands, riparian, or other sensitive or critical habitat. Project-related biological impacts are considered and mitigated consistent with local, state and federal regulations, which includes compliance with “no net loss” of acreage and values policies of the state and federal agencies. The required mitigation would reduce the project’s contribution to any significant cumulative impact on sensitive wetlands, riparian, or other sensitive natural communities and habitats to ***less than cumulatively considerable***.

The proposed project would have a potentially significant impact related to the loss of connected vernal pool and seasonal wetland habitat. However, impacts would be less than significant with implementation of *Mitigation Measure BIO-4*. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to the movement of any native or resident or migratory fish or wildlife species or wildlife corridors. The required mitigation would reduce the project’s contribution to any significant cumulative impact on nursery sites and wildlife corridors to ***less than cumulatively considerable***.

The Butte County Association of Governments initiated development of the Butte Regional Conservation Plan (BRCP) in 2007, which has not yet been formally approved or implemented. As currently being revised, the BRCP is expected to exclude the Stonegate project from the BRCP permit area, which would eliminate any conflict between the BRCP and the project. As

such, the proposed project would not conflict with any adopted or approved plans and no impact would occur. In addition, the proposed project would comply with the City of Chico Municipal Code and would have a less-than-significant impact related to local biological policies. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in no impact related to HCPs, recovery plans, natural community conservation plans, local ordinances or other approved policies intended to protect biological resources. Therefore, impacts from the proposed project with buildout of the General Plan related to policies and plans related to biological resource protection are **not cumulatively considerable**.

### **Cultural Resources**

The geographic scope of the cumulative cultural resources analysis is the project vicinity. Cultural resource impacts tend to be localized because the integrity of any given resource depends on what occurs only in the immediate vicinity around that resource, such as disruption of soils. The project site contains four historical resources. All four sites either not eligible for the California and National Registers or determined that the project would not have an adverse effect on them. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less than significant impacts related to historical resources. Therefore, the proposed project, in conjunction with the build-out of the General Plan, would also result in less-than-significant impacts related to historic resources. Impacts to historical resources would be **less than cumulatively considerable**.

Despite the negative findings on the site, there is still the potential for accidental discovery of archeological or paleontological resources. The potential for discovery and disturbance of any of these resources during excavation is considered potentially significant. Implementation of *Mitigation Measure CULT-1* would ensure that potentially significant impacts to archaeological and paleontological resources are reduced to a less-than-significant level. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to archaeological and paleontological resources. Therefore, the proposed project, in conjunction with the build-out of the General Plan, would also result in less-than-significant impacts related to archaeological and paleontological resources with mitigation incorporated. Impacts to archaeological and paleontological resources would be **less than cumulatively considerable**.

### **Geology and Soils**

The potential cumulative impacts for geology, soils, and seismicity are generally site-specific and do not extend beyond a project's boundaries (particularly at level sites where no significant slopes or landslide hazards occur), because geological impacts are confined to discrete spatial locations and do not generally combine to create a cumulative impact condition. The exception to this would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the project could affect the geology of an off-site location. These circumstances would not occur as a result of implementation of the proposed project, and so do not apply. Conformance with the CBC and

would reduce project-related geohazard impacts to a less-than-significant level. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to geology and soils. Therefore, cumulative geotechnical impacts would be ***not cumulatively considerable***.

Regarding soil erosion, development activities could lead to increased erosion rates on site soils, which could cause unstable ground surfaces and increased sedimentation in nearby streams and drainage channels. However, the project would be required to implement a Stormwater Pollution Prevention Program in compliance with the National Pollution Discharge Elimination System (NPDES) stormwater permitting program, which regulates water quality originating from construction sites. Therefore, as the proposed project would have to comply with federal and state regulations designed to minimize impacts to projects on a wide geographic scale, the project's contribution to any significant cumulative erosion impact is ***not cumulatively considerable***.

### **Greenhouse Gas Emissions**

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in significant and unavoidable impacts related to generation of greenhouse gas emissions that would conflict with applicable reduction measures. Greenhouse gas emissions and climate change, by nature, is a cumulative impact. The proposed project's operational-period emissions would exceed the significance thresholds, and therefore project operations would make a ***cumulatively considerable*** contribution to greenhouse gas emissions impacts.

### **Hazards and Hazardous Materials**

The geographic scope of the cumulative hazards and hazardous materials analysis is the project site. Adverse effects of hazards and hazardous materials tend to be localized; therefore, the area near the project site would be most affected by project activities. Hazards and hazardous materials are extensively regulated at the Federal, State and local levels. There are no land uses in the project vicinity that are known to utilize large quantities of hazardous materials or involve hazardous activities, and there is no existing cumulatively significant impact in this regard.

As the project site is currently undeveloped, cumulative development within the vicinity of the project site and other areas of the City of Chico has the potential to increase hazards and hazardous materials impacts on existing and future residents. However, with the implementation of the applicable plans and policies, the proposed project would not create or be subject to temporary or permanent hazards or hazardous material impacts. Increased urbanization in the area resulting from this development would also reduce the threat of wildland fire for the surrounding area. 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. Therefore, the proposed project would not have a significant contribution to potential cumulative impacts and impacts are ***not cumulatively considerable***.

## Hydrology and Water Quality

This section addresses the incremental effects of the proposed project in connection to the effects of other closely related past, present, and reasonably foreseeable future projects. The geographic area for the cumulative impacts analysis is the areas of the City of Chico which discharge stormwater to the same stormwater drainage systems that will serve the project site, and the surface water bodies that receive runoff from the project site, primarily Butte Creek. Stormwater discharges are affected by urban pollutants that contribute to the degradation of water quality in surface waters near the project site. Urban pollutants in stormwater include petroleum hydrocarbons, sediments, metals, pesticides, and trash. Past, current and reasonably foreseeable projects in the vicinity of the project site could result in cumulative impacts associated with stormwater discharges, similar to the potential impacts from construction of the proposed project. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to surface water quality, stormwater drainage, flooding, and groundwater quality. In order to adequately address cumulative water quality impacts, stormwater regulations have become progressively more stringent since the passage of the federal CWA, and current NPDES permits now require new development and redevelopment projects to manage and treat all significant sources of stormwater pollutants and reduce runoff. NPDES permit requirements apply to the cumulative projects as well as the proposed project. As such, a reduction in runoff and overall pollutant loads in stormwater in the vicinity of the project site is anticipated over time, thereby reducing cumulative impacts. Although overall water quality in Butte Creek is anticipated to improve over time, the creek is currently designated as “impaired” by the State Water Board.

The implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2* would ensure that stormwater runoff and flood water flows from the proposed project would not result in cumulatively considerable impacts related to water quality, flooding, erosion/sedimentation, or exceeding the capacity of the existing stormwater drainage system. The required mitigation would reduce the project’s contribution to any significant cumulative impact on stormwater and flooding to ***less than cumulatively considerable***.

## Land Use and Planning

The geographic scope of the cumulative land use analysis is the Chico area. Land use decisions are made at the city level; therefore, the Chico area is an appropriate geographic scope. Development within Chico is governed by the City’s General Plan and Municipal Code, which ensure logical and orderly development and require discretionary review to ensure that projects do not result in land use impacts due to inconsistency with the General Plan and other regulations. As a result, there is no existing cumulatively significant land use impact.

Cumulative land use impacts could occur if other related projects in the vicinity of the project site would result in land use incompatibility impacts in conjunction with the impacts of the proposed project. The proposed project is generally consistent with the General Plan as the designations for the site would still permit a variety of residential, commercial, and open space uses. Upon

approval, the project would be consistent with the General Plan, as the General Plan itself would reflect the project. Development of the proposed project as proposed would not result in any cumulative significant land use impacts as other projects are implemented in the area. Each project would undergo the same project review process as the proposed project to preclude potential land use incompatibility and planning policy conflicts. It is assumed that cumulative development would progress in accordance with the criteria set forth within the jurisdiction of the City of Chico in which the cumulative development is located. Each project would be analyzed independent of other land uses, as well as within the context of existing and planned developments, to ensure that the goals, objectives, and policies of the City are consistently upheld. Therefore, land use impacts are ***not cumulatively considerable***.

### Noise

Outdoor noise measurements taken at the project site indicate that the average ambient noise levels are within the “normally acceptable” or “conditionally acceptable” range for all land uses. Therefore, there is no existing cumulatively significant noise impact in the project vicinity.

The proposed project’s construction noise levels may cause a temporary substantial increase in noise levels at nearby receptors. Mitigation is included that would require implementation of construction noise attenuation measures to reduce noise levels in addition to meeting Municipal Code limitations on construction noise. Other projects listed in Table III-5 (Related Projects) would be required to implement similar mitigation and adhere to Municipal Code restrictions regarding construction noise. It is highly unlikely that a substantial number of the cumulative projects would be constructed simultaneously and close enough to one another for noise impacts to be compounded, given that the projects are at widely varying stages of approval and development. Therefore, it is reasonable to conclude that construction noise from the proposed project would not combine with noise from other development projects to cause cumulatively significant noise impacts. Therefore, the proposed project would not have a significant contribution to potential cumulative impacts and impacts are ***not cumulatively considerable***.

The proposed project’s construction and operational vibration levels would not exceed annoyance thresholds, and impacts would be less than significant. Because vibration is a highly localized phenomenon, there would be no possibility for vibration associated with the project to combine with vibration from other projects because of their distances from the project site. Therefore, the proposed project would not contribute to a cumulatively significant vibration impact and impacts are ***not cumulatively considerable***.

The proposed project’s contribution to vehicular noise levels would not exceed the applicable thresholds of significance, which take into account existing noise levels as well as noise from trips associated with other planned or approved projects. Thus, the proposed project would not combine with other projects to cause a cumulatively considerable increase in ambient roadway noise and impacts are ***not cumulatively considerable***.



Other projects listed in Table III-5 (Related Projects) would be required to evaluate noise and vibration impacts and implement mitigation, if necessary, to minimize noise impacts pursuant to local regulations. Therefore, the proposed project, in conjunction with other planned and approved projects, would not have a cumulatively significant impact related to noise and impacts are ***not cumulatively considerable***.

### **Population and Housing**

The geographic scope of the cumulative land use analysis is the Chico area. Population projects are made at the city level; therefore, the Chico area is an appropriate geographic scope. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to a substantial increase in population and housing. The proposed project intends to create an additional 733 dwelling units, to house approximately 1,928 persons. However, if the recent 1.47% growth rate is projected forward from the 2017 population of 93,383, the estimated 2030 General Plan build-out population of 139,713 would occur in the 2050s. Given that Chico is experiencing a lower growth rate than assumed for the General Plan, the City's population in 2030 could be significantly less than the 139,713 projected. For example, if the 1.47% growth rate was to continue consistently, the 2030 population would be approximately 113,000, approximately 25,000 persons below the population assumption of the General Plan. The proposed project would have a less-than-significant impact related to substantial population growth. While the General Plan EIR assumes only 15% of the associated project would be built, rather than the proposed development of 65% of the site, the additional 1,928 would still be accounted for in the General Plan projections. Given the build-out would still be able to account for the additional persons of the proposed project, and with the anticipation of additional development projects, impacts associated with the proposed project in conjunction with General Plan build-out are ***not cumulatively considerable***.

### **Public Services**

The geographic scope of the cumulative public services analysis is the service area of each of the providers serving the proposed project. Because of differences in the nature of the public service and utility topical areas, they are discussed separately. No existing cumulatively significant impacts have been identified for any of these areas, as all service providers are able to achieve the requisite level of service, capacity or response times.

#### ***Fire Protection***

The geographic scope of the cumulative fire protection and emergency medical services analysis is the Chico Fire Department's service area, which consists of the Chico city limits and nearby unincorporated areas of Butte County. The service area is approximately 33 square miles and has a full time service population of 88,634 persons.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to fire protection. Although build-out of the General Plan

Background Report is supposed to incorporate and plan for all development through the year 2030, development of only 15% of the project site is accounted for, rather the proposed development of 65% of the site. Because the project site is within one mile from the nearest fire station (Station 4), it would not directly result in a need for new or expanded fire protection facilities. Funding for any additional fire personal that may be required would be provided through impact fees and property taxes. Additionally, the project would comply with all requirements of the California Fire Code, including the provision of adequate emergency access points. The proposed project in conjunction with the General Plan build-out would have a less-than-significant impact and impacts are ***not cumulatively considerable***.

#### *Police Protection*

The geographic scope of the cumulative police protection analysis is the local service areas of the Chico Police Department, which consist of the Chico city limits.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to police protection. Although build-out of the General Plan Background Report is supposed to incorporate and plan for all development through the year 2030, development of only 15% of the project site is accounted for, rather the proposed development of 65% of the site. The proposed project would have the potential to provide housing for approximately 1,928 residents. The proposed project would not create a need for new or expanded police protection facilities and, therefore, would not result in a physical impact on the environment. Police services go through an annual budgeting process during which citywide priorities are established and service level monitored. The increased demand for police service that would result from the introduction of housing and commercial uses proposed for the site would require the addition of approximately two additional officers to maintain the current staffing rate of approximately 1 officer/1,000 residents. The project would not require the construction of a new station or result in a significant increased demand for police services. Funding for additional law enforcement services would be provided through impact fees and property taxes. The proposed project in conjunction with General Plan build-out would result in a less-than-significant impact and impacts are ***not cumulatively considerable***.

#### *Schools and Library Services*

The geographic scope of the cumulative school services analysis is the local service area of the school district. The CUSD serves the City of Chico and adjacent unincorporated areas. The proposed project could potentially add 512 new students. The geographic scope of the cumulative library services analysis is the local service area of the Butte County Library Branch. The Chico Library Branch serves the City of Chico. The proposed project could potentially add approximately 1,928 new persons. The demand for library services generated by the proposed project site would increase.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to public schools and library services. Although build-out of the General Plan Background Report is supposed to incorporate and plan for all development

through the year 2030, development of only 15% of the project site is accounted for, rather than the proposed development of 65% of the site. As the General Plan mentions two schools already planned, it does not appear that the number of students in the proposed project would create a need for new school facilities to be constructed. The project applicant would be required to pay developer fees to offset any impacts the project would have on the school districts serving the site. Implementation of the proposed project would not require the Butte County Library to construct new facilities or expand existing facilities to accommodate increased demand for library services. Furthermore, the project applicant would be required to pay development impact fees, which would reduce the project's impact related to public schools and library services. The proposed project in conjunction with General Plan build-out would result in a less-than-significant impacts and impacts are ***not cumulatively considerable***.

### **Parks and Recreation:**

The geographic scope of the cumulative parks and recreation analysis is the service area of the Chico Area Recreation and Park District. The proposed project would result in 1,928 new residents. However the project would also preserve 35% of the site or 108.8 acres as open space and incorporate two parks totaling 3.3 acres. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to parks and recreational facilities. Although build-out of the General Plan Background Report is supposed to incorporate and plan for all development through the year 2030, only 15% of the proposed project is accounted for. The proposed project would contribute 3.3 acres of parkland and would pay all necessary development impact fees to ensure funding for adequate recreational facilities and impacts would be less-than-significant. The proposed project in conjunction with General Plan build-out would result in a less-than-significant impact and impacts are ***not cumulatively considerable***.

### **Recreation**

The geographic scope of the cumulative parks and recreation analysis is the service area of the Chico Area Recreation and Park District (CARD). The proposed project would result in 1,928 new residents. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to a substantial increase in the use of existing parks and recreation facilities. The build-out associated with the General Plan EIR anticipates impacts to be less than cumulatively considerable once full build-out has been reached. However, development of only 15% of the project site is included in this build-out scenario, rather than the proposed development of 65% of the site. The proposed project would contribute 3.3 acres of parkland and 108.8 acres of open space. As, this would not be sufficient to meet the parkland standards, residents may seek off-site parks and recreational facilities. The increase in the residential population by the proposed project in conjunction with the 48 single family and multi-family residential projects in the vicinity would further exacerbate the existing deficiency of parks in the City. The project applicant would be required to pay development impact fees for park facilities on behalf of CARD and the City, impacts to

recreational facilities from the proposed project in conjunction with the build-out of the General Plan would be ***less than cumulatively considerable***.

The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to the construction or expansion of parks and recreation facilities to meet increased demand. Development of the proposed project in combination with General Plan buildout would result in an increase in employees and residents in the project area. The increase in the residential population by the proposed project in conjunction with other residential development accounted for in the General Plan buildout in the vicinity would further exacerbate the existing deficiency of parks in the City. The project applicant would be 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 neighborhood and community parks and community use facilities to the extent they are needed as a result of the new development, impacts from the construction or expansion of parks and recreational facilities would be ***less than cumulatively considerable***.

### **Transportation and Traffic**

The Cumulative scenario is the analysis scenario in which traffic impacts are analyzed assuming the development of numerous reasonable and foreseeable land uses expected in 2035. This analysis utilizes the 2010 BCAG travel demand model, developed as part of the 2012 BCAG MTP/SCS, to establish future land use and traffic assumptions for 2035. While a City of Chico travel demand model is available, the BCAG travel demand model was utilized for this study because it includes more recent existing and future land use and roadway network within the City of Chico and throughout the BCAG region. To ensure that the BCAG model was sensitive and accurate for this application, it was tested and validated against benchmarks specified by the modeling guidelines contained in the 2010 California Regional Transportation Plan Guidelines (CTC, 2010) and the Travel Model Validation and Reasonable Checking Manual, Second Edition (FHWA, 2010). For cumulative conditions, year 2035 land used inputs were updated to incorporate new development projects that may have been omitted from the original version of the BCAG travel demand model.

Cumulative No Project conditions assume no development or transportation modifications associated with the Stonegate Vesting Subdivision Map project. The Cumulative Plus Project scenario is the analysis scenario in which transportation impacts associated with the proposed project are analyzed in comparison to the Cumulative No Project scenario. Project-related impacts with potential to occur under the Cumulative Plus Project scenario are presented at the end of this section.

Individual cumulative impacts are discussed in the Section IV.O (Transportation and Traffic) of this Draft EIR. As stated in section, Section IV.O (Transportation and Traffic) The required mitigation would reduce the project's contribution to any significant cumulative impact on transportation and traffic resources to ***less than cumulatively considerable***.

## Tribal Cultural Resources

Implementation of the proposed project in combination with the General Plan buildout would result in the development of various land uses in the City of Chico. Impacts to tribal cultural resources tend to be site-specific and are assessed on a site-by-site basis. The extent of the tribal cultural resources that occur at various sites throughout the were identified by tribal representatives as part of the General Plan EIR process and reflected in the sensitivity map as areas that would likely be sensitive for Native American cultural resources. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to cultural resources. Pursuant to AB-52, tribes were contacted for consultation of potential impacts to tribal cultural resources for the proposed project. The proposed project would result in less than significant impacts to tribal cultural resources with implementation of *Mitigation Measure CULT-2*. The required mitigation would reduce the project's contribution to any significant cumulative impact on tribal cultural resources to ***less than cumulatively considerable***.

## Utilities and Service Systems

### *Water*

The geographic scope of the cumulative potable water analysis is the California Water Service Company (Cal Water) Chico-Hamilton City District service area, which encompasses Chico, Hamilton City, and nearby unincorporated areas of Butte County. The Chico-Hamilton City District service area population was estimated to be 99,630. Water supply impacts are analyzed in Section IV.P (Utilities and Service Systems) of this EIR, which concluded that Cal Water has adequate potable and recycled water supplies to serve the proposed project, as well as other existing and future users. Therefore, there is no existing cumulatively significant impact related to potable water supply.

Cal Water adopted its current CH District UWMP in June 2016. Per Section 10910(c) (3) of the Water Code, the water supply assessment is based on information contained in the UWMP, updated water demand data for 2016, 2017 and other sources cited within it. Cal Water concluded in their WSA that the CH District supplies are adequate to meet forecasted demands for the proposed project, those associated with existing Cal Water customers, two major developments - Meriam Park and Oak Valley and increases in demand due to some customer relaxation of water conservation practices for the next 20+ years. Furthermore, the project could meet water supply demands under normal, single dry year and multiple dry year conditions. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to water supply demand. Therefore, impacts associated with water supply for the proposed project with build out of the General Plan are ***not cumulatively considerable***.

### *Wastewater*

The geographic scope of the cumulative wastewater analysis is the Chico Water Pollution Control Plant service area, which treats effluent from the City of Chico.

All future projects would be required to demonstrate that sewer service is available to ensure that adequate sanitation can be provided. The proposed project is estimated to generate 209,958 gallons per day. The Chico treatment plant has a capacity to treat 9.0 mgd but currently receives 7.0 mgd from Cal Water's Chico service area. The net increase of 0.2099 mgd attributable to the proposed project represents a little more than three (3) percent of flows received from the Cal Water service area (7.0 mgd), and would not exceed the capacity of the treatment plant. Therefore, project-specific impacts are less than significant. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to wastewater discharge, conveyance, and treatment requirements. As such, the plant would be expected to accept the proposed project's increase in effluent without needing to expand existing or construct new facilities, as the treatment capacity is sufficient to serve both the project and planned future development in the area. Therefore, impacts related to wastewater from the proposed project, in conjunction with General Plan buildout, are ***not cumulatively considerable***.

### *Drainage*

The geographic scope of the cumulative storm drainage analysis is municipal storm drainage in the project vicinity, as these facilities would receive the project's runoff. All future development projects in the project vicinity would be required to provide drainage facilities that collect and detain runoff such that off-site releases are controlled and do not create flooding. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to stormwater drainage capacity. While the proposed project would be required to comply with the NPDES Permit and SWPPP, development of the proposed project would potentially increase the rate, volume, and duration of stormwater discharges, alter the FEMA flood zones of the project site, and contribute to hydromodification downstream of the project site. Implementation of *Mitigation Measures HYDRO-1* and *HYDRO-2* would reduce potentially significant impacts related to erosion and siltation from altered drainage patterns to a less-than-significant level. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to stormwater drainage. Although build-out of the General Plan Background Report is supposed to incorporate and plan for all development through the year 2030, development of only 15% of the project site is accounted for, rather than the proposed development of 65% of the site. The required mitigation would reduce the project's contribution to any significant cumulative impact on drainage to ***less than cumulatively considerable***.

### *Solid Waste*

The geographic scope of the cumulative solid waste analysis are the areas served by the Neal Road Recycling and Waste Facility located in unincorporated Butte County, south of Chico. Future development projects would generate construction and operational solid waste and, depending on the volumes and end uses, would be required to implement recycling and waste reduction measures.

The proposed project is anticipated to generate 4,824.5 cubic yards of waste during construction and 2,259.8 cubic yards of waste on an annual basis. According to the Draft EIR for the 2030 Chico General Plan, the Neal Landfill has a remaining capacity of 85.9% and the landfill is expected to operate until 2033 accommodating a 2.5% to 3.5% annual increase in waste due to anticipated growth in Chico and Butte County. The proposed project's net increase in operational waste generation represents less than 0.01 percent of the 20.8 million cubic yards in available capacity at the Neal Road Recycling and Waste Facility. Moreover, the values shown in the table are not adjusted to account for recycling and waste reduction activities that would serve to divert waste from the landfill. Therefore, long-term operational impacts on landfill capacity would be less than significant. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to solid waste disposal and regulations. Sufficient capacity is available to serve the proposed project as well as existing and planned land uses in the City of Chico for the foreseeable future. Accordingly, impacts related to solid waste from the proposed project, in conjunction with General Plan buildout, are ***not cumulatively considerable***.

### *Energy Usage*

The geographic scope of the cumulative energy analysis is the Pacific Gas & Electric (PG&E) service area. PG&E's electrical service area consists of all or part of the 47 counties in California (including Butte County), while its natural gas service area consists of 39 counties in California comprising most of the northern and central portions of the State (including Butte County). The proposed project would demand an estimated 13,210,337 kWh of electricity and 40,216,000 cubic feet of natural gas annually. The proposed project's structures would be designed in accordance with Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), indoor and outdoor lighting, and illuminated signs. The incorporation of the Title 24 standards into the project would ensure that the project would not result in the inefficient, unnecessary, or wasteful consumption of energy. The 2030 General Plan Update EIR concluded that build-out of the General Plan would result in less-than-significant impacts related to the inefficient, wasteful, or unnecessary consumption of energy. All future development in the City of Chico would be subject to the Title 24 standards as these are state mandated regulations. Therefore, impacts related to energy consumption from the proposed project, in conjunction with other future projects are ***not cumulatively considerable***.

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## V. GENERAL IMPACT CATEGORIES

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### A. SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts which cannot be avoided. Specifically, Section 15126.2(b) states:

*“Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reason why the project is being proposed, notwithstanding their effect, should be described.”*

Based on the analysis contained in this Draft EIR and the Initial Study included in Appendix A, implementation of the proposed project would result not result in significant unavoidable environmental impacts for the majority of impact areas. The project would create significant unavoidable impact to greenhouse gas emissions. Furthermore, the project would create cumulatively considerable impacts to greenhouse gas emissions.

### B. GROWTH INDUCING IMPACTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines requires a discussion of the ways in which a proposed action could be growth inducing. This includes ways in which the project would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Section 15126.2(d) of the CEQA Guidelines reads as follows:

*“Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some project which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.”*

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines Section 15126.2(d)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

The proposed project would add short-term employment opportunities provided during the construction phase of the project. Using a standard commercial employment rate of 1 employee/500 square feet, the proposed project is estimated to create as many as 890 new long-term jobs. The California Employment Development Department estimated that there were 6,600 unemployed persons in Butte County as of May 2016. Of this figure, an estimated 2,600 unemployed persons are in Chico. Thus, there is adequate capacity in the local labor market to fill the proposed project's new employment opportunities such that it would be unlikely that substantial growth inducement would occur.

As the proposed project includes residential development, it can be estimated that the proposed project would increase population by approximately 1,928 people through the addition of the single and multi-family units proposed. The project would create 733 units to provide housing for the growing population of the City of Chico. BCAG forecasts that an additional 7,039 dwelling units, low scenario, would be required to sustain growth by 2030. The General Plan also predicted that 16,376 additional dwelling units would be required by 2030. The project would contribute only a portion, approximately 10.4% of the BCAG prediction and 4.47% of the General Plan projection, of the predicted housing needs. As the proposed project would not exceed the City's population projections, no significant population or housing impacts would be created by the project. In addition, as the proposed project includes mixed use, commercial and office uses as well, the proposed project would not require additional development to support this new residential community. As discussed below, the proposed project would not induce growth in an area that is not already developed with infrastructure to accommodate such growth.

While the proposed project would include expand and utilize existing infrastructure, infrastructure would not be provided beyond what is necessary to serve the proposed project. As such, indirect impacts, including the extension of roads or other infrastructure, would not be anticipated to induce substantial population growth in the area that would otherwise not have occurred as rapidly or in as great a magnitude. Therefore, impacts would be less than significant and no mitigation measures are required. Further, the proposed project would be adequately served by existing public services such as fire/emergency and police services in the vicinity of the project site. Therefore, the project would not result in significant growth inducing impacts.

## C. ENERGY CONSERVATION

Public Resources Code Section 21100(b)(3) and *Section 15126.4 of the CEQA Guidelines* require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct State responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below and in Section IV.P (Utilities and Service Systems), this EIR concludes that the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy, would not cause the need for additional natural gas or electrical energy producing facilities, and, therefore, would not create a significant impact on energy resources.

### Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy related research and development projects, and through funding for transportation infrastructure improvements. At the state level, the CPUC and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and state energy-related laws and plans are discussed below.

### ***Federal Regulations***

#### Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. The act includes tax incentives for the following: energy

conservation improvements in commercial and residential buildings; fossil fuel production and clean coal facilities; and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers. It directs the USDOE to study and report on alternative energy sources such as wave and tidal power, and includes funding for hydrogen research. The Act also increases the amount of ethanol required to be blended with gasoline, and extends daylight saving time (to begin earlier in spring and end later in fall) to reduce lighting requirements. It also requires the federal vehicle fleet to maximize use of alternative fuels. The Act further includes provisions for expediting construction of major energy transmission corridors, such as high-voltage power lines, and fossil fuel transmission pipelines. These are just a few examples of the provisions contained in the Act.<sup>1</sup>

#### Energy Independence and Security Act of 2007

Signed into law in December 2007, this broad energy bill included an increase in auto mileage standards, and also addressed biofuels, conservation measures, and building efficiency. The U.S. EPA administers the Corporate Average Fuel Economy (CAFE) program, which determines vehicle manufacturers' compliance with existing fuel economy standards. The bill amended the CAFE standards to mandate significant improvements in fuel efficiency (i.e., average fleet wide fuel economy of 35 miles per gallon by 2020, versus the previous standard of 27.5 mpg for passenger cars and 22.2 mpg for light trucks).<sup>2</sup>

Another provision includes a mandate to increase use of ethanol and other renewable fuels by 36 billion gallons by 2022, of which 21 million gallons is to include advanced biofuels, largely cellulosic ethanol, that have 50 to 60 percent lower GHG emissions. The bill also includes establishment of a new energy block grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs, among other things.<sup>3</sup>

#### Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA") promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that MPOs such as BCAG were required to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement,

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<sup>1</sup> United States Congress, *Energy Policy Act of 2005 (Public Law 109-58)*, passed July 29, 2005.  
<https://www.congress.gov/bill/109th-congress/house-bill/6>

<sup>2</sup> EPA. 2007. *Summary of the Energy Independence and Security Act*. Available online at:  
<https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act>

<sup>3</sup> *Ibid*

energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

### Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century (“TEA-21”) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, 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 good transportation decisions. TEA-21 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.

### **State Regulations**

#### Energy Action Plan

In 2003, the three key energy agencies in California— the CEC, the California Power Authority (“CPA”), and the CPUC— jointly adopted an Energy Action Plan (“EAP”) that listed goals for California’s energy future and set forth a commitment to achieve these goals through specific actions. In 2005, the CPUC and the CEC jointly prepared the EAP II to identify the further actions necessary to meet California’s future energy needs. EAP II describes the priority sequence for actions to address increasing energy needs, also known as “loading order.” The loading order identifies energy efficiency and demand response as the state’s preferred means of meeting growing energy needs. After cost-effective efficiency and demand response, the state is to rely on renewable sources of power and distributed generation, such as combined heat and power applications. To the extent that efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, the EAP II supports the use of clean and efficient fossil-fired generation. The plan recognizes that concurrent improvements are required to the bulk electricity transmission grid and distribution facility infrastructure to support growing demand centers and the interconnection of new generation, both on the utility and customer side of the meter. The EAP II identifies key actions to be taken in all of these areas in order to meet the state’s growing energy requirements. The plan recommendations are implemented by the governor through executive orders, by the legislature through new statutes, and by the responsible state agencies through regulations and programs. Progress on EAP II implementation is reported in successive biennial updates of the plan.<sup>4</sup>

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<sup>4</sup> State of California, Energy Commission and Public Utilities Commission, “Energy Action Plan II – Implementation Roadmap for Energy Policies,” September 21, 2005.  
[http://www.energy.ca.gov/energy\\_action\\_plan/2005-09-21\\_EAP2\\_FINAL.PDF](http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF)

### Title 24 (California Energy Code)

The California Energy Code (Title 24, Part 6, of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings), provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The provisions of the California Energy Code apply to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances; they also give guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls, and ceilings. The CEC adopted the 2005 changes to Building Efficiency Standards, which emphasized saving energy at peak periods and seasons, and improving the quality of installation of energy-efficiency measures. It is estimated that implementation of the 2005 Title 24 standards have resulted in an increased energy savings of 8.5 percent relative to the previous Title 24 standards. Compliance with Title 24 standards is verified and enforced through the local building permit process.<sup>5</sup> The 2008 Title 24 Standards, which had an effective date beginning August 1, 2009, include added provisions that require, for example, "cool roofs" on commercial buildings; increased efficiency in heating, ventilating, and air conditioning systems; and increased use of skylights and more efficient lighting systems.<sup>6</sup> Title 24 Standards were further updated with the 2013 Building Energy Efficiency Standards, which are estimated to lead to 25 percent less energy consumption for residential buildings and 30 percent savings for nonresidential buildings over 2008 Energy Standards. 2013 standards, which updated codes for lighting, space heating and cooling, ventilation, and water heating, took effect on July 1<sup>st</sup> 2014.

### California Green Building Standards Code

All new construction must adhere to the California Green Building Standards Code (CCR, Title 24, Part 11) in place at the time of construction. As an example, the 2013 Title 24 California Green Building Standards, referred to as CALGreen:

- Sets a threshold of a 20 percent reduction in indoor water use and includes voluntary goals for reductions of 30 percent, 35 percent and 40 percent.
- Requires separate meters for indoor and outdoor water use at nonresidential buildings; and at those sites, irrigation systems for larger landscaped areas must be moisture-sensing.
- Calls for 50 percent of construction waste to be diverted from the landfills and lists higher, voluntary diversion amounts of 65 percent to 75 percent for new homes, and 80 percent for commercial construction.

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<sup>5</sup> California Energy Commission (2016) Web site (Building Efficiency Standards), <http://www.energy.ca.gov/title24>

<sup>6</sup> Ibid.

- Mandates inspections of energy systems -- such as the heat furnace, air condition and mechanical equipment -- for nonresidential buildings that are larger than 10,000 square feet to "ensure that all are working at their maximum capacity according to design efficiencies."
- Requires that paint, carpet, vinyl flooring, particle board and other interior finish materials be low-emitting in terms of pollutants.

#### Senate Bill X1 2

SB X1 2, enacting the California Renewable Energy Resources Act, expands the Renewable Portfolio Standard by establishing a goal of 20 percent of the total electricity sold to retail customers in California per year from renewable sources by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the Renewable Portfolio Standard. The CPUC has established the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20 percent by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. The Act also requires that the governing boards for local publicly owned electric utilities establish the same targets, and the governing boards are responsible for ensuring compliance with these targets. The CPUC is responsible for enforcement of the Renewable Portfolio Standard for retail sellers, while the CEC and California Air Resources Board (CARB) will enforce the requirements for local publicly owned electric utilities.

#### Executive Order S-3-05

EO S-3-05 was signed by the Governor on June 1, 2005. EO S-3-05 established the following statewide emission reduction targets:

- Reduce GHG emissions to 2000 levels by 2010,
- Reduce GHG emissions to 1990 levels by 2020, and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

EO S-3-05 created a Climate Action Team (CAT) headed by Cal EPA and including several other state agencies. The CAT is tasked by EO S-3-05 with implementing the global warming emission reduction programs identified in the Climate Action Plan and to report on the progress made toward meeting the emission reduction targets established in the EO.

The first report to the Governor and the Legislature was released in March 2006 and will be issued bi-annually thereafter. The 2006 CAT report to the Governor contains recommendations and strategies to help ensure the targets in EO S-3-05 are met (Cal EPA, 2006). Subsequent CAT reports discussed the progress and supplemental recommendations to ensure the targets

of EO S-3-05. The 2010 CAT Report to the Governor and the Legislature was issued in December 2010.<sup>7</sup>

#### Executive Order B-30-15

EO B-30-15 was signed by the Governor on April 29, 2015. EO B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030. This intermediate GHG emissions reduction target will make it possible to meet the ultimate GHG emissions reduction target of 80 percent below 1990 levels by 2050, as established in EO S-3-05.

#### California Global Warming Solutions Act of 2006

In September 2006, the governor signed AB 32, the Global Warming Solutions Act of 2006, which mandates that California's GHG emissions be reduced to 1990 levels by 2020. The act directs the California EPA to work with state agencies to implement a cap on GHG emissions (primarily carbon dioxide) from stationary sources of such as electric power generation facilities, and industrial, commercial, and waste-disposal sectors. Since carbon dioxide emissions are directly proportional to fossil fuel consumption, the cap on emissions is expected to have the incidental effect of forcing a reduction in fossil fuel consumption from these stationary sources. Specifically, AB 32 directs the California EPA to work with other state agencies to accomplish the following: 1) promulgate and implement GHG emissions cap for the electric power, industrial, and commercial sectors through regulations in an economically efficient manner; 2) institute a schedule of greenhouse gas reductions; 3) develop an enforcement mechanism for reducing GHG; 4) establish a program to track and report GHG emissions.<sup>8</sup>

#### Senate Bill 350

SB 350, the Clean Energy and Pollution Reduction Act, was signed by the Governor on October 7, 2015 requiring the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50% by December 31, 2030. This bill would require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. The bill would require the Public Utilities Commission to establish efficiency targets for electrical and gas corporations consistent with this goal. The bill would require local publicly owned electric utilities to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

#### Senate Bill 32

SB 32, the Global Warming Solutions Act, provides an update to the California Global Warming Solutions Act of 2006 and would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

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<sup>7</sup> Cal EPA. 2010. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. December 2010. Available online at: [http://climatechange.ca.gov/climate\\_action\\_team/reports/index.html#2006](http://climatechange.ca.gov/climate_action_team/reports/index.html#2006).

<sup>8</sup> Assembly Bill 32, Passed August 31, 2006, <http://www.arb.ca.gov/cc/docs/ab32text.pdf>.



## **Local Regulations**

In addition to the federal and state regulations and guidelines, the following is a synopsis of local regulations and goals relative to reducing or avoiding significant impacts on energy use.

### City of Chico General Plan

**Mayor's Climate Protection Agreement (2006)** - In 2006, Chico's Mayor signed the U.S. Conference of Mayor's Climate Protection Agreement, adding Chico to a group of over 600 cities united in pledging to reduce greenhouse gas emissions. This milestone led to the creation of the Sustainability Task Force, a committee that provides input to the City Council on sustainability issues. An early effort of the Task Force was to conduct an inventory of greenhouse gases.

**Greenhouse Gas Emissions Inventory (2008)** - The Greenhouse Gas Emissions Inventory measured the amount of heat-trapping gases that the community released to the atmosphere in the baseline year 2005. By quantifying emissions, this inventory established a benchmark against which emissions reductions can be measured. The inventory will be updated to measure emission changes over time, which helps guide the management of reduction strategies and policies. Also in 2008, the City Council approved a specific greenhouse gas emissions reduction target of 25 percent below 2005 levels by the year 2020.

**Chico Climate Action Plan (2011)** - The City will maintain a Climate Action Plan (CAP) that identifies programs and actions to reduce greenhouse gas emissions to meet the Council's greenhouse gas reduction goal. Specifically, the CAP identifies the sources of greenhouse gas emissions and the sectors such as transportation, energy, and waste to be targeted for emissions reductions, and it provides emission reduction goals and strategies with an associated timeline and budget.

## **Energy Requirements of the Proposed Project**

Short-term construction and long-term operational energy consumption are discussed below.

### *Short-Term Construction*

The United States Environmental Protection Agency (EPA) regulates nonroad diesel engines that power both mobile equipment (e.g., bulldozers, scrapers, front end loaders, etc.) and stationary equipment (e.g., generators, pumps, compressors, etc.). The EPA has no formal fuel economy standards for nonroad (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, EPA adopted the first set of emission standards ("Tier 1") for all new nonroad diesel engines greater than 37 kilowatts (kW [50 horsepower]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing nitrogen oxide (NOx) emissions from these engines by 30 percent. Subsequently, the EPA adopted more stringent emission standards for NOx, hydrocarbons, and particulate matter from new nonroad diesel engines. This program included the first set of standards for nonroad diesel engines less than 37 kW. It also phased in more stringent "Tier 2" emission standards from 2001 to 2006 for all engine sizes and added yet more stringent "Tier 3"

standards for engines between 37 and 560 kW (50 and 750 horsepower) from 2006 to 2008. These standards further reduced nonroad diesel engine emissions by 60 percent for NOx and 40 percent for particulate matter (PM) from Tier 1 emission levels. In 2004, EPA issued the Clean Air Nonroad Diesel Rule. This rule cut emissions from nonroad diesel engines by more than 90 percent, and was phased in between 2008 and 2014. These emission standards are intended to promote advanced clean technologies for nonroad diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

The proposed project would entail short-term construction activities that would consume energy, primarily in the form of diesel fuel (e.g., mobile construction equipment) and electricity (e.g., power tools). Construction activities would be subject to applicable regulations such as anti-idling measures, limits on duration of activities, and the use of alternative fuels, thereby reducing energy consumption.

There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the State. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

### *Long-Term Operations*

#### Transportation Energy Demand

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards and for revising existing standards. As of December 2014, NHTSA indicated that the fuel economy of passenger vehicles averaged 34.2 miles per gallon and light trucks averaged 26.2 miles per gallon. The proposed development is projected to generate approximately 6,054 gross daily trips for residential land uses and 23,566 gross daily trips for commercial land uses. The population of the project area is estimated to be 139,713 by the year 2030 according to the 2030 General Plan. The proposed project is generally consistent with the General Plan as the designations for the site would still permit, residential, commercial, and open space uses. Although the project proposes to reconfigure the location of these designations, the only land use designation that would be removed would be the existing Office Mixed Use that would be replaced with Commercial Mixed Use. Therefore, the proposed project is consistent with regional growth projections in the area based on land use designations, including increased vehicle trips, and would not constitute an unnecessary or wasteful source of energy consumption.

#### Building Energy Demand

Pacific Gas and Electric Company (PG&E) provides electricity to all or parts of 47 counties that comprise Northern California, including the City of Chico. PG&E obtains electricity from a variety of sources including its own generation plants and purchased power from outside

sources. The project can promote building energy efficiency through compliance with energy efficiency standards and energy efficiency measures that exceed required standards.

As discussed in Section IV.P (Utility and Service Systems), the proposed project is estimated to consume 13,210,337 kWh of electricity and 40,216,000 cubic feet of natural gas on an annual basis, less than a 0.02% increase of PG&E's annual usage. All new development would be subject to the latest adopted edition of the Title 24 energy efficiency standards, which are among the most stringent in the United States. As such, the proposed project would not result in the unnecessary, wasteful, or inefficient use of energy.

## D. SIGNIFICANT IRREVERSIBLE CHANGES TO THE ENVIRONMENT

*Section 15126.2(c) of the CEQA Guidelines states that significant irreversible environmental changes associated with a proposed project shall be discussed, including the following:*

- Uses of nonrenewable resources during the initial and continued phases of the project that may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely;*
- Primary impacts and, particularly, secondary impacts (such as highway improvement that provides access to a previously inaccessible area), which generally commit future generations to similar uses; and*
- Irreversible damage that could result from environmental accidents associated with the project.*

The project would permanently occupy the primary scenic vista of the Sierra Nevada foothills available from Bruce Road and would commit future generations to a close up view of the project. See Section IV.B (Aesthetics) for an in-depth discussion regarding impacts to Aesthetics.

Construction of the proposed project would require the use of nonrenewable resources (i.e., wood, metals, sand, gravel, fossil fuels) for building materials and to fuel construction vehicles and equipment. Subsequent use and maintenance of the project would also require the long-term consumption of these nonrenewable resources at reduced levels.

The project would use common cleaning and maintenance materials, which would be shipped, stored, used and disposed of in accordance with applicable regulations. Otherwise, the proposed project would not involve the routine use, transport, or disposal of hazardous materials. During project construction the project would be required to follow all applicable requirements to ensure safe use, storage and disposal of any hazardous materials or wastes that could be used. For these reasons, the project would not result in any significant hazards to the public or the environment through the routine transport, use or disposal of hazardous materials, or through upset or accident conditions. See Section IV.H (Hazards and Hazardous Materials) for an in-depth discussion regarding impacts for Hazards and Hazardous Materials.

Implementation of the project would increase the amount of activity on the site, which would increase the likelihood of environmental accidents, such as fire on the site. However, federal and state safety regulations, as well as local compliance monitoring by the City of Chico Fire Department would limit the potential for irreversible environmental damage caused by fire.

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## VI. ALTERNATIVES TO THE PROPOSED PROJECT

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The State CEQA Guidelines require that EIRs include the identification and evaluation of a reasonable range of alternatives that are designed to reduce the significant environmental impacts of the project while still meeting the general project objectives. The State CEQA Guidelines also set forth the intent and extent of alternatives analysis to be provided in an EIR. Those considerations are discussed below.

### **Alternatives to the Proposed Project**

Section 15126.6(a) of the CEQA Guidelines states: *“An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparable merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.”*

### **Purpose**

Section 15126.6(b) of the CEQA Guidelines states: *“Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly.”*

### **Significant Project Impacts**

Greenhouse gas emissions from future land uses within the project are anticipated to be cumulatively significant, and the project's impact with regard to greenhouse gas emissions would remain significant and unavoidable after mitigation.

### **Selection of a Reasonable Range of Alternatives**

Section 15126.6(c) of the CEQA Guidelines states: *“The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR*

*should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."*

## **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 objectives of the proposed project are as follows:

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Enhance public access to and protect the integrity of the Butte Creek Diversion Channel and adjacent habitats;
- Create residential neighborhoods in the project that offer a variety of housing types at various densities and price points to help meet the City's housing needs;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide commercial centers near major intersections to serve the surrounding residential neighborhoods and greater community; and
- Provide revenue to local businesses during project construction and operation.

## **Overview of Selected Alternatives**

The alternatives to be analyzed in comparison to the proposed project include:

Alternative A: No Project Alternative

Alternative B: Elimination of RS-20 Lots

Alternative C: Existing Zoning Alternative

**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 alternative involving development only west of Bruce Road was rejected as infeasible as it would not meet most of the project objectives including the objectives to provide a significant number of single family (460 lots) and multi-family residential units (12.4 acres) to help meet the City's needs for housing. This alternative was further deemed infeasible, as it would not provide revenue to local businesses during project construction and operation in a financially feasible manner.

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 or that could accommodate the density of this project in the City of Chico 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.

**Assumptions and Methodology**

The anticipated means for implementation of the alternatives can influence the assessment and/or probability of impacts for those alternatives. For example, a project may have the potential to generate significant impacts, but considerations in project design may also afford the opportunity to avoid or reduce such impacts. The alternatives analysis is presented as a comparative analysis to the proposed project and assumes that all applicable mitigation measures proposed for the project would apply to each alternative. The following alternatives analysis compares the potential significant environmental impacts of two alternatives with those of the proposed project for the environmental topics analyzed in detail in Sections IV.B – IV. Q of the Draft EIR.

## **A. NO PROJECT ALTERNATIVE**

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.” Therefore, Alternative A. the No Project Alternative would be the scenario in which the no grading or development would occur on the project site and the existing site conditions would remain.

### **Impact Analysis**

Under Alternative A, no grading or development would occur on the project site and the existing site conditions would remain. The analysis of Alternative A assumes the continuation of existing physical conditions on the site. Accordingly, this alternative would avoid all of the proposed project’s significant impacts (including significant unavoidable greenhouse gas emission impacts), as well as the need to implement any mitigation measures.



## Relationship of the Alternative to the Project Objectives

The No Project Alternative would not meet the following project objectives:

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Enhance public access to and protect the integrity of the Butte Creek Diversion Channel and adjacent habitats;
- Create residential neighborhoods in the project that offer a variety of housing types at various densities and price points to help meet the City's housing needs;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide commercial centers near major intersections to serve the surrounding residential neighborhoods and greater community; and
- Provide revenue to local businesses during project construction and operation.

## Conclusion

The Alternative A would avoid the proposed project's significant impacts and would have less impact on all environmental topical areas. However, it would meet only one of the eight objectives for the proposed project.

## B. ELIMINATION OF RS-20 LOTS ALTERNATIVE

Under Alternative B, the 45 proposed suburban-residential (RS-20) lots in the southeast portion of the project site would be eliminated and approximately 13 acres of the 20-acre commercial lot (Lot 471) would be shifted to Low Density Residential (R1) development, Figure VII.AltS-1. All other portions of the project would remain the same as the proposed project.

### *Elimination RS-20 Lots*

Alternative B would eliminate the need to extend infrastructure and utilities east of the Butte Creek Diversion Channel with the project. The area previously associated with the RS-20 lots, which contains 1.2 acres of occupied Butte County meadowfoam habitat, would be added to the open space preserve and habitat monitoring plan to be established as part of the project.

### *Commercial-to-Residential Shift*

Under Alternative B, approximately 13 acres of the 20-acre commercial lot (Lot 471) would be shifted to Low Density Residential (R1) development. The approximately 7-acre commercial lot would still be situated at the intersection of Bruce Road and East 20<sup>th</sup> Street, and the remaining 13 acres (nearest Parkhurst Street and Laredo Way) would be platted out with R1 lots appropriate for single-family residential development. Based on an average gross density of 5 units per acre, the additional 13 acres of R1-zoned property would correspond to approximately 65 homes. Thus, Alternative B would result in the following changes to the project totals listed on Page III-10:

Open Space: 131.1 acres (up from 108.8 acres)

Single-family residential, standard lots (489 lots): 94.0 acres

Single-family, half-acre lots (0 lots): 0 acres (down from 22.3 acres)

Commercial: 23.6 acres (down from 36.6 acres)

Changes to the amount of public right-of-way dedication will depend upon the specific street network design for the added R1 lots, but is anticipated to remain around approximately 42 acres.

Alternative B would require the following, but not necessarily limited to, discretionary approvals:

- Vesting Tentative Subdivision Map
- General Plan Amendment
- Rezone
- Boundary Line Modification
- Grading permits
- Building permits



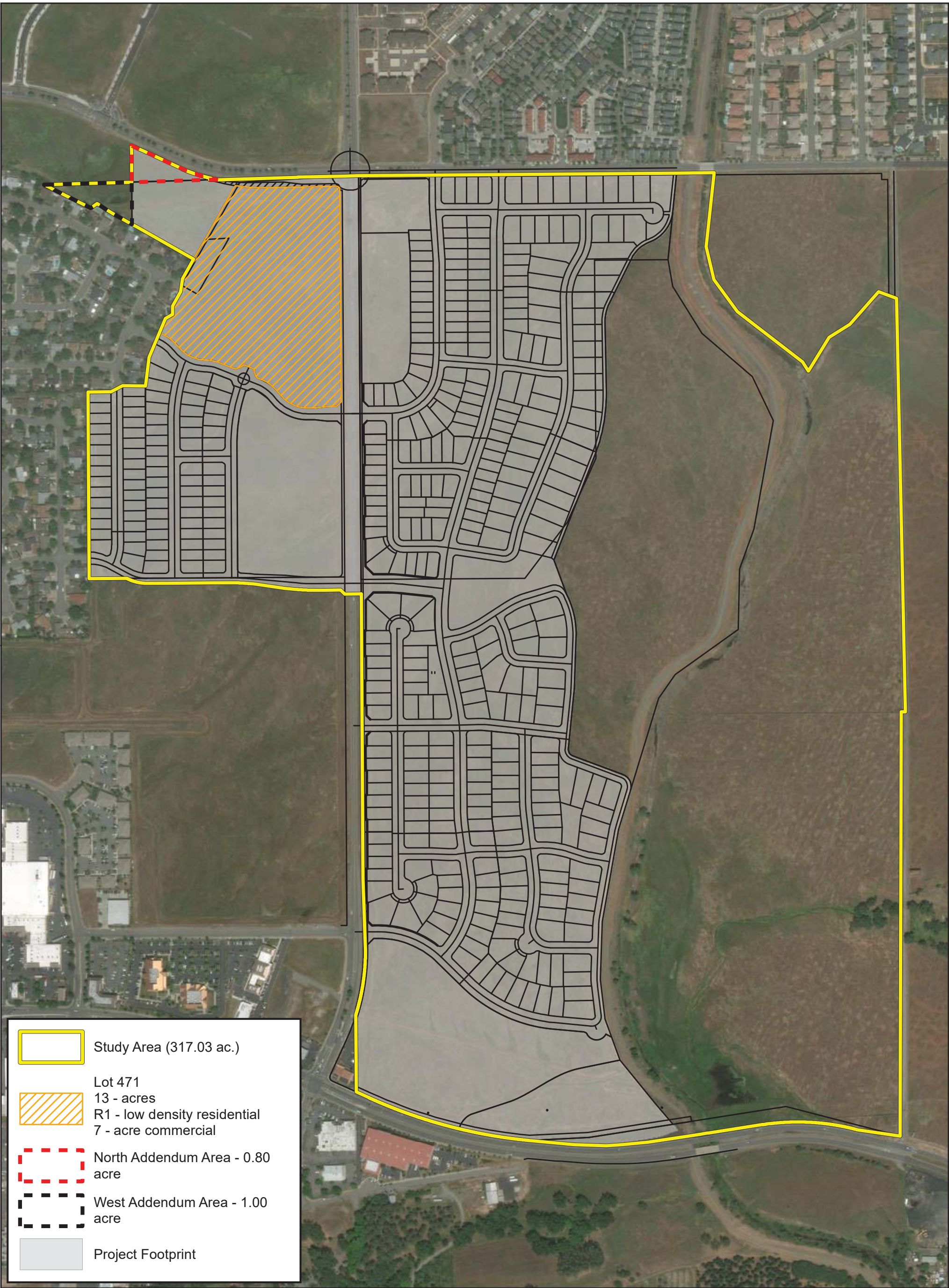
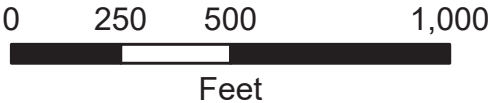


Figure VII.Alt-1. Alternative B Project Footprint

Stonegate Vesting Tentative Subdivision  
Map and GPA/Rezone  
City of Chico, California



Map Prepared Date: 4/6/2018  
Map Prepared By: smortensen  
Base Source: Esri Streaming - NAIP 2014  
Data Source(s): WRA, Rolls Anderson & Rolls, Foothill



## Aesthetics

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. All other project features would be located in the same locations, and be used for land use activities similar to those of the proposed project. Additionally, similar exterior light fixtures and illumination elements would be installed. The elimination of RS-20 lots would reduce blockage of the sloping foothills adjacent to the site, which would be beneficial from a visual perspective. Therefore, the Alternative B would have less impact on aesthetics, light, and glare than the proposed project.

## Air Quality

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Alternative B would generate fewer overall trips and vehicle miles traveled than the proposed project and, therefore, would reduce operational emissions of criteria pollutants, toxic air contaminants, and greenhouse gas emissions. The reduction in daily trip generation would lessen the severity of air quality impacts as shown in Table VII.ALTS-1.

**Table VII.ALTS-1: Alternative B Operational Emissions**

Scenario	ROG	NO <sub>x</sub>	PM <sub>10</sub>
<b>Unmitigated - Daily</b>			
Maximum Daily Emissions (pounds)	51.7 lbs.	39.1 lbs.	71.9 lbs.
<i>BCAQMD Thresholds (pounds/day)</i>	25 lbs.	25 lbs.	80 lbs.
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Mitigated - Daily</b>			
Mitigated Maximum Daily Emissions (pounds)	51.7 lbs.	39.1 lbs.	71.9 lbs.
<i>BCAQMD Thresholds (pounds/day)</i>	25 lbs.	25 lbs.	80 lbs.
<b>Exceed Threshold?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>

The same mitigation measures as presented in the Air Quality section would apply under Alternative B, though the anticipated monetary amount needed to mitigate residual impacts would be lower. Based on the current calculations (26.7 pounds ROG + 14.1 pounds NO<sub>x</sub> = 40.8 pounds/day x 180/2,000 = 3.67 tons/year/5.5 = 0.67 x 25 x \$18,260 = \$304,776), this would result in a payment of \$304,776 to the Off-site Mitigation Program, which would be

utilized by the BCAQMD for a variety of emission reduction programs located throughout the Air District. Mitigation Measure AIR-2C/GHG-1 requires the project applicant to participate in an Off-site Mitigation Program in order to reduce ROG and NO<sub>x</sub> operational emissions to less than significant levels, consistent with the BCAQMD's CEQA Handbook and current practices. Therefore, Alternative B would have comparable but less impact on air quality emissions than the proposed project.

### Biological Resources

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, thereby avoiding the need to excavate under the Diversion Channel and through intervening sensitive biological habitats. Shifting approximately 13 acres of the proposed 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development would not affect biological resources. Sensitive species and habitat, as described in Section IV.D, would still be impacted under Alternative B, though to a lesser degree, and the impacts can be completely mitigated by implementing the mitigation measures listed in Section IV.D. Development under Alternative B would avoid Impacts BIO-1b (pallid bat), BIO-1e (Valley elderberry longhorn beetle), and BIO-3a (riparian habitat disturbance), and would significantly reduce Impact BIO-2 (Butte County Meadowfoam) as quantified below. Alternative B would result in the following reductions to the impacts identified in Section IV.D:

**Table VII.ALTS-2: Direct Impact Reductions within the Study Area**

Resources	Total (acres)
Butte County meadowfoam	1.20 (52% percent reduction)
Mixed Riparian Woodland	0.02
Non-native Annual Grassland	28.02
Wetlands and Waters	0.24

**Table VII.ALTS-3: Direct Impact Reductions within the Study Area**

<b>Resources</b>	<b>Total (acres)</b>
Butte County meadowfoam	0.15
Mixed Riparian Woodland	0.56
Non-native Annual Grassland	16.66
Wetlands and Waters	2.01

Therefore, Alternative B would have less impact on biological resources than the proposed project.

### **Cultural Resources**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Similar ground-disturbing activities would occur and therefore, mitigation identical to the proposed project for historic resources, archaeological resources, paleontological resources, and burial sites would be implemented. However, elimination of the RS-20 lots would reduce potential impacts to the stone walls that abut the eastern boundary of the project site. This alternative would not require cuts into the walls to allow access to the RS-20 lots. Therefore, Alternative B would have less cultural resources impacts than the proposed project.

### **Geology and Soils**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. The project site would still be subjected to ground shaking and related hazards under both Alternative B and the proposed project. As with the proposed project, all structures would be constructed in accordance with the latest adopted seismic safety standards, and erosion control measures would be implemented. Therefore, Alternative B would have geology, soils, and seismicity impacts similar to the proposed project.

### **Greenhouse Gas Emissions**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Alternative B would generate fewer overall trips and vehicle miles traveled than the proposed project and, therefore, would reduce operational emissions of criteria pollutants, toxic air contaminants, and greenhouse gas emissions. The reduction in daily

trip generation would lessen the severity of greenhouse gas emissions impacts as shown in Table VII.ALTS-4.

**Table VII.ALTS-4: Alternative B Mitigated Annual Project  
GHG Emissions (CO<sub>2</sub>e) in Metric Tons**

<b>Source Category</b>	<b>Proposed Project 2035</b>
Area	225
Energy Consumption	2,116
Mobile	7,051
Solid Waste Generation	1,491
Water Usage	206
Total	11,090
<b>Threshold</b>	<b>1,100 MT of CO<sub>2</sub>e/per year</b>
<b>Cumulatively Considerable?</b>	<b>Yes</b>
Service Population Capita Emissions <sup>1</sup>	<b>4.64</b>
<b>Threshold</b>	<b>4.6 MT of CO<sub>2</sub>e/capita</b>
<b>Significant?</b>	<b>Yes</b>

<sup>1</sup> Based on an estimated service population 1,784 Residents + 606 Employees, Total 2,390

The same mitigation as presented in the Greenhouse Gas Emissions section would apply under Alternative B, and after implementation of mitigation GHG operational emissions would remain **significant and unavoidable**. Therefore, Alternative B would have greenhouse gas emissions impacts similar to the proposed project.

### **Hazards and Hazardous Materials**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. As with the proposed project, no hazardous conditions exist on-site and the project's end users would not expose surrounding receptors to hazardous materials; therefore, impacts would be less than significant. Therefore, Alternative B would have hazards and hazardous materials impacts similar to the proposed project.

## Hydrology and Water Quality

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. This alternative would require less impermeable surfaces on the project site. The reduction in impermeable surfaces on the project site would cause a reduction in runoff rates and velocities compared to the proposed project. Eliminating the RS-20 lots also avoids placing fill and structures within flood hazard zones located east of the levee, which is discussed under Impacts HYDRO-3 and HYDRO-4, and required Mitigation Measure HYDRO-1. Therefore, surface hydrology impacts from Alternative B would be less than those associated with the proposed project, and only Mitigation Measure HYDRO-2 would be needed to reduce hydrology impacts to less-than-significant levels. Water quality impacts associated with Alternative B would be subject to mandatory compliance with the City of Chico's Phase II National Pollutant Discharge Elimination System (NPDES) Storm Water Management Plan.

## Land Use and Planning

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. This alternative would require the same entitlements as the proposed project, and would yield similar conclusions in terms of land use. Buffering the existing single-family residential uses that abut proposed Lot 471 with similar single-family homes would improve neighborhood compatibility. Reducing the size of the commercial site from 20 acres to approximately 7 acres would also likely result in smaller-scale commercial development with a more localized market area and neighborhood-serving uses. Alternative B would have land use impacts similar to the proposed project.

## Noise

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Alternative B would generate fewer overall traffic trips than the proposed project. Potential noise impacts associated with future commercial development (parking areas, loading docks and truck routes) at the southwest corner of East 20<sup>th</sup> Street and Bruce Road would apply relative to the new residences added under this alternative instead of the existing residences along Parkhurst Street and Niagra Way which would be buffered from new commercial uses by the added residences. Although both Alternative B and the proposed project would have less than significant impacts with regard to noise generation, the reduction in daily trip generation associated with Alternative B would be more beneficial from a noise perspective. Therefore, Alternative B would have less impact on noise than the proposed project.



## **Population and Housing**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. The net effect of Alternative B with regard to future housing and population would be 20 additional single-family homes and approximately 50 additional persons compared to the proposed project. The amount of housing and population growth under Alternative B would be approximately the same as the proposed project, comprising 10% of the housing growth and 13% of the population growth predicted by BCAG between 2017 and 2030. Therefore, Alternative B would have similar impacts on population and housing as the proposed project.

## **Public Services**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Because this alternative includes approximately 3% more units than the proposed project, it would slightly increase demands for fire protection, police protection, school and library services, and parks compared to the proposed project. However, this small increase in demands would not change the conclusion that impacts on public services would be less than significant. Therefore, Alternative B would have similar impacts on public services as the proposed project.

## **Recreation**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Because this alternative includes approximately 3% more units than the proposed project, it would slightly increase needs for recreation facilities. However, this small increase in need would not change the conclusion that impacts on recreation facilities would be less than significant. Therefore, Alternative B would have similar impacts on recreation facilities as the proposed project.

## **Transportation and Traffic**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. This alternative would result in 20 additional residential units and a reduction of approximately 140,000 square feet of commercial uses relative to the proposed project. These changes in future land uses correspond to an approximately 37% reduction in anticipated total daily trips from the site compared to the proposed project. Although this is a large reduction in estimated trips, it is not anticipated to affect conclusions in the Traffic section (IO.V) regarding the need to improve certain intersections during project build-out. Mitigation Measures TRANSPORTATION-1/-6, and TRANSPORTATION-2/-7 require

signalizing Bruce Road at Raley Boulevard and Skyway at Forest Avenue, respectively, based primarily on future traffic anticipated from the southern commercial medical/dental office uses (Lot 472), and that would not change under Alternative B. Mitigation Measure TRANSPORTATION-5 would also still apply under this alternative to support the provision of future transit service along the Bruce Road corridor.

Conversely, eliminating the RS-20 lots would alleviate the need to add bike lanes and pedestrian facilities along Skyway between Potter Road and Bruce Road pursuant to Mitigation Measures TRANSPORTATION-3 and TRANSPORTATION-4, respectively. Overall, Alternative B would have less impact on transportation than the proposed project.

### **Utilities and Service Systems**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Because this alternative would result in 20 additional residential units and a reduction of approximately 140,000 square feet of commercial uses relative to the proposed project, it would have a corresponding overall reduction in demand for water and energy, and less generation of wastewater and solid waste. As the proposed project was found to have a less than significant impact on utilities, the same conclusion would apply to this alternative. Therefore, Alternative B would have less impact on utilities and service systems than the proposed project.

### **Tribal Cultural Resources**

Alternative B includes the elimination of the RS-20 lots and associated infrastructure, and shifting approximately 13 acres of the 20-acre commercial lot (Lot 471) to Low Density Residential (R1) development. Similar ground-disturbing activities would occur and therefore, mitigation identical to the proposed project for tribal cultural resources would be implemented. Therefore, Alternative B would have tribal cultural resources impacts similar to the proposed project.

## **Relationship of the Alternative to the Project Objectives**

Alternative B would meet the following project objectives:

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Provide a significant number of single family (460 lots) and multi-family residential units (12.4 acres) to help meet the City's needs for housing;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide a community commercial area to serve the surrounding residential neighborhoods; and
- Provide revenue to local businesses during project construction and operation.

## **Conclusion**

Alternative B would lessen the severity of significant impacts that can be reduced to a level of less than significant with mitigation (e.g., aesthetics, air quality, biological resources, hydrology and water quality, noise, and traffic and transportation).

The Alternative B would meet all of the project objectives, although several would be advanced to a lesser degree than the proposed project primarily because of the reduction in development potential from the elimination of the RS-20 lots and associated infrastructure.

## C. EXISTING LAND USE DESIGNATIONS ALTERNATIVE

Under Alternative C, the proposed project would not include amendments to the General Plan and Zoning land use designations. The project would be developed under the current General Plan and Zoning land use designations. Table VII. Alts-5 shows the project site's existing land use designations.

**Table VII. Alts-5: Existing General Plan and Zoning Land Use Designations**

APN/acres	Existing GP Designation	Existing Zoning District
002-190-041 / 48.0 acres	LDR/RCO OMU/RCO	R1-RC OR-RC
018-510-007 / 100.2 acres	VLDR/RCO POS SOS	RS-20-PD-RC OS1 OS2
018-510-008 / 111.1 acres	LDR/RCO MHDR/RCO SOS	R1-RC R3-RC OS2
018-510-009 / 53.7 acres	LDR/RCO OMU/RCO SOS	R1-RC OR-RC OS2
002-220-006 / 7.75 acres <sup>1</sup>	SOS	OS2
<sup>1</sup> Approximately 1.0 acre of this parcel would be included in the proposed project.		

Under Alternative C, the project would not include any community commercial, as it is not permitted under the existing land use designations. This alternative would retain the open space zoning that conforms to the Butte Creek Diversion Channel corridor (approximately 6 acres), but would not establish a large open space preserve as would the proposed project. Development under Alternative C instead would include more low density residential throughout the project site. Higher-density multifamily would be shifted from the northern portions of the project site along Bruce Road to the southern border adjacent to Skyway. A limited amount of office residential would be permitted at the corners of Bruce Road and East 20<sup>th</sup> Street. Half-acre suburban residential (RS-20) lots would be developed on the entire area east of the Diversion Channel.

Alternative C would require the following, but not necessarily limited to, discretionary approvals:

- Vesting Tentative Subdivision Map
- Boundary Line Modification
- Grading permits
- Building permits

### **Aesthetics**

Alternative C would include the project site being developed under existing land use designations. Alternative C would be subject to the same design review, lighting, and glare requirements as the proposed project. The project site development would occur across more of the site; however, building heights would be lower. Lower building heights would reduce the amount of blockage of foothill views available to the east of the project site, which would be beneficial from a visual perspective. Alternative C would have less impact on aesthetics, light, and glare than the proposed project.

### **Air Quality/Greenhouse Gas Emissions**

Alternative C includes the elimination of the community commercial. The buildout potential of this alternative would be more than the proposed project and, therefore, would result in higher levels of construction emissions. Although construction emissions impacts would be higher, it is likely that they could still be mitigated to a level of less than significant. Because residential uses have lower trip-generation rates than community commercial uses, Alternative C would generate fewer weekday daily trips and fewer Saturday daily trips than the proposed project and, therefore, would reduce operational emissions of criteria pollutants, toxic air contaminants, and greenhouse gas emissions. The community commercial aspects of the proposed project account for a significant amount of trips. The reduction in daily trip generation would lessen the severity of the proposed project's air quality and greenhouse gas emissions impacts. Therefore, Alternative C would have less impact on air quality/greenhouse gas emissions than the proposed project.

### **Biological Resources**

Alternative C would include the project site being developed under existing land use designations. Sensitive species, as described in Section IV.D, could potentially use the project site. Construction and operation activities under Alternative C would impact these species more than the proposed project, particularly with regard to Butte County meadowfoam where all 5.14 acres of onsite occupied habitat would be removed. These impacts are substantially greater than those associated with the proposed project, and it is not apparent if they would be completely mitigated by implementing the mitigation measures listed in Section IV.D. This alternative would result in potentially significant impacts that can be mitigated to less-than-

significant levels for jurisdictional waters, riparian habitat, and invasive plant species. Alternative C would have more impacts to biological resources than the proposed project.

### **Cultural Resources**

Alternative C would include the project site being developed under existing land use designations. Similar ground-disturbing activities would occur and therefore, mitigation identical to the proposed project for historic resources, archaeological resources, paleontological resources, and burial sites would be implemented. Therefore, Alternative C would have cultural resources impacts similar to the proposed project.

### **Geology and Soils**

Alternative C would include the project site being developed under existing land use designations. The project site would still be subjected to ground shaking and related hazards under both Alternative C and the proposed project. As with the proposed project, all structures would be constructed in accordance with the latest adopted seismic safety standards, and erosion control measures would be implemented. Therefore, Alternative C would have geology, soils, and seismicity impacts similar to the proposed project.

### **Hazards and Hazardous Materials**

Alternative C would include the project site being developed under existing land use designations. As with the proposed project, no hazardous conditions exist on-site and the project's end users would not expose surrounding receptors to hazardous materials; therefore, impacts would be less than significant. Therefore, Alternative C would have hazards and hazardous materials impacts similar to the proposed project.

### **Hydrology and Water Quality**

Alternative C would include the project site being developed under existing land use designations. The development of additional single family homes instead of community commercial would reduce impermeable surfaces in some areas while adding homes where the proposed project plans open space would increase impermeable surfaces which would increase runoff rates and velocities compared to the proposed project. Therefore, surface hydrology impacts from Alternative C would be greater than those associated with the proposed project, although the project's significant hydrology impacts can be mitigated to less-than-significant levels. Furthermore, water quality impacts associated with Alternative C would be subject to mandatory compliance with the City of Chico's Phase II National Pollutant Discharge Elimination System (NPDES) Storm Water Management Plan.

### **Land Use and Planning**

Alternative C would include the project site being developed under existing land use designations. Therefore, Alternative C would be consistent with land use plans. Impacts would be similar to the proposed project.

### **Noise**

Alternative C would include the project site being developed under existing land use designations. The buildout potential of this alternative would be less than the proposed project and, therefore, construction noise impacts would be less severe than the proposed project, although these impacts can be mitigated to a level of less-than-significant. Alternative C would generate fewer weekday daily trips and fewer Saturday daily trips than the proposed project, as housing creates less trips than commercial uses. Although the proposed project was found to have less than significant impacts with regard to roadway noise, the reduction in daily trip generation would be considered more beneficial from a noise perspective. Therefore, the Alternative C would have less impact on noise than the proposed project.

### **Population and Housing**

Alternative C would include the project site being developed under existing land use designations. Under Alternative C, more housing would be developed than the proposed project. Additional housing units would increase the number of future residents of the project. Impacts under the proposed project were found to have a less than significant impact on population and housing. Even though Alternative C would result in less than significant impacts, impacts associated with this alternative would be greater than proposed project.

### **Public Services**

Alternative C would include the project site being developed under existing land use designations. Under Alternative C, more housing would be developed in the place of community commercial, which would have similar demand for fire protection and police protection. The proposed project was found to have a less than significant impact on fire protection and police protection, and this alternative have similar impacts compared to the proposed project.

Additional housing units would increase the number of future residents of the project. The increase in population would have a corresponding increase in demand for school services and parks. Although, the proposed project was found to have a less than significant impact on school services and parks, Alternative C would have greater impacts to schools services and parks.



**Recreation**

Alternative C would include the project site being developed under existing land use designations. Under Alternative C, more housing would be developed in the place of community commercial, a corresponding increase in population would occur. An increase in population would create a higher demand associated with the project for recreation facilities. Although the proposed project and Alternative C would have a less than significant impacts on recreation facilities, this alternative would be greater than proposed project. Therefore, Alternative C would have greater impacts on recreation facilities than the proposed project.

**Transportation and Traffic**

Alternative C would include the project site being developed under existing land use designations. Under Alternative C, more housing would be developed, instead of community commercial under the proposed project. Because residential uses have lower trip-generation rates than community commercial uses, Alternative C would generate fewer trips and would impact intersections in the area to a lesser degree. Overall, Alternative C would have less impact on transportation than the proposed project.

**Utilities and Service Systems**

Alternative C would include the project site being developed under existing land use designations. Under Alternative C, more housing would be developed, instead of community commercial under the proposed project. The elimination of the community commercial development would have a corresponding reduction in demand for water and energy, and less generation of wastewater and solid waste. Although the proposed project was found to have a less than significant impact on utilities, the reduction in utility demand would be considered beneficial. Therefore, Alternative C would have less impact on utilities and service systems than the proposed project.

**Tribal Cultural Resources**

Alternative C would include the project site being developed under existing land use designations. Similar ground-disturbing activities would occur and therefore, mitigation identical to the proposed project for tribal cultural resources would be implemented. Therefore, Alternative C would have tribal cultural resources impacts similar to the proposed project.

**Relationship of the Alternative to the Project Objectives**

Alternative C would not meet the following project objectives:

- Provide commercial centers near major intersections to serve the surrounding residential neighborhoods and greater community;



- Preserve a significant amount of open space on the site, over 100 acres, so as to retain the areas of highest biological resource value;
- Enhance public access to and protect the integrity of the Butte Creek Diversion Channel and adjacent habitats.

Alternative C would meet the following project objectives:

- Subdivision of the property into residential, commercial, open space and park lots in a manner that is consistent with the City of Chico's land use plans, policies, and regulations;
- Construction of infrastructure to serve all proposed lots;
- Create residential neighborhoods in the project that offer a variety of housing types at various densities and price points to help meet the City's housing needs;
- Development of a project that is consistent with City design policies and Design Guidelines Manual;
- Provide revenue to local businesses during project construction and operation.

## **Conclusion**

Alternative C would lessen the severity of significant impacts that can be reduced to a level of less than significant with mitigation (e.g., aesthetics, air quality/greenhouse gas emissions, noise, and traffic and transportation). However, it would increase impacts related to biological resources, hydrology and water quality, population and housing, schools, parks, and recreation facilities.

The Alternative C would not meet the objective of providing a community commercial area to serve the surrounding residential neighborhoods, nor the objective to provide a large open space preserve to protect biological resources. It would meet other objectives, although several would be met to a lesser degree than the proposed project, primarily due to the elimination of community commercial land uses.

## **D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

In addition to the discussion and comparison of impacts of the proposed project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an “environmentally superior” alternative be selected and the reasons for such a selection disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the City and/or project applicant.

In this case, Alternative A (No Project Alternative) would result in the least amount of significant environmental impacts (see Table VII. Alts-6). However, Section 15126.6 of the CEQA Guidelines requires that another environmentally superior alternative be selected in addition to the No Project Alternative. Based on the analysis provided above and in the Alternatives Comparison Table (see Table VII. Alts-6), it has been determined that Alternative B (Elimination of RS-20 lots Alternative) would be the environmentally superior alternative.

Table VII. Alts-6: Alternatives Comparison

Environmental Topic Area	PROPOSED PROJECT	ALTERNATIVE A (No Project Alternative)	ALTERNATIVE B (Elimination of RS-20 lots)	ALTERNATIVE C (Existing Land Use Designations)
Aesthetics, Light, and Glare	Less Than Significant With Mitigation	No Impact	Less Impact	Less Impact
Air Quality	Less Than Significant With Mitigation	No Impact	Less Impact	Less Impact
Biological Resources	Less Than Significant With Mitigation	No Impact	Less Impact	Greater Impact
Cultural Resources	Less Than Significant With Mitigation	No Impact	Less Impact	Similar Impact
Geology, Soils, and Seismicity	Less Than Significant	No Impact	Similar Impact	Similar Impact
Greenhouse Gas Emissions	Significant Unavoidable	No Impact	Similar Impact	Less Impact
Hazards and Hazardous Materials	Less Than Significant	No Impact	Similar Impact	Similar Impact
Hydrology and Water Quality	Less Than Significant With Mitigation	No Impact	Less Impact	Greater Impact
Land Use Planning	Less Than Significant	No Impact	Similar Impact	Similar Impact
Noise	Less Than Significant With Mitigation	No Impact	Less Impact	Less Impact
Population and Housing	Less Than Significant	No Impact	Similar Impact	Greater Impact
Public Services	Less Than Significant	No Impact	Similar Impact	Similar Impact
Recreation	Less Than Significant	No Impact	Similar Impact	Greater Impact
Transportation and Traffic	Less Than Significant With Mitigation	No Impact	Less Impact	Less Impact
Utilities and Service Systems	Less Than Significant With Mitigation	No Impact	Less Impact	Less Impact
Tribal Cultural Resources	Less Than Significant With Mitigation	No Impact	Similar Impact	Similar Impact

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## IX. REFERENCES

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### AESTHETICS

City of Chico 2030 General Plan, Open Space and Environmental Element.

California Department of Transportation, "The California Scenic Highway System: A List of Eligible and Officially Designated Routes,"  
[http://www.dot.ca.gov/hq/LandArch/16\\_livability/scenic\\_highways](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways). Accessed August 2016.

### AGRICULTURE AND FORESTRY RESOURCES

California Division of Land Resource Protection, Farmland Mapping and Monitoring Program.  
Butte County Important Farmland 2014.  
<http://www.conservation.ca.gov/dlrp/fmmp/Pages/Butte.aspx> . Accessed May 17, 2016.

### AIR QUALITY

BCAQMD, 2014. CEQA Air Quality Handbook. October 23.

USEPA, 2000. Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements. EPA420-F-00-057. December 2000.

California Air Resources Board. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October 2000.

Butte County Air Quality Management District, 2014. CEQA Air Quality Handbook. October.

City of Chico. Chico 2030 General Plan. Amended March 2017.

United States Census. <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed: March 12, 2018.

Pacific Gas & Electric, 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. November.

CARB, 2013. The California Almanac of Emissions and Air Quality.

Personal correspondence with Bill Mannel, Solid Waste Manager, Butte County.

Personal correspondence with Jason Mandy, Associate Planner, BCAQMD.

### BIOLOGICAL RESOURCES

[CCH] Consortium of California Herbaria. 2016. Data provided by the participants of the Consortium of California Herbaria. Available online at:  
<http://ucjeps.berkeley.edu/consortium/>; most recently accessed: April 2016.



- [CDFW] California Department of Fish and Wildlife. 2016. California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch, Sacramento, CA.
- Cicero, C. 2000. Oak Titmouse (*Baeolophus inornatus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/485a>
- [CNPS] California Native Plant Society. 2016a. A Manual of California Vegetation, Online Edition. Sacramento, California. Online at: <http://vegetation.cnps.org/>; most recently accessed: May 2016.
- [CNPS] California Native Plant Society. 2016b. Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, California. Online at: <http://rareplants.cnps.org/>; most recently accessed: May 2016.
- Dunk, JR. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/178>.
- eBird. 2016. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: <http://www.ebird.org>; most recently accessed: May 2016.
- Eriksen, C. and D. Belk. 1999. Fairy shrimps of California's pools, puddles, and playas. Mad River Press, Eureka, CA.
- Google Earth. 2016. Aerial Imagery 1998 – 2016. Accessed May 2016.
- Helm, B. 1997. Biogeography of Eight Large Branchiopods Endemic to California. In Ecology, conservation, and management of vernal pool ecosystems – proceedings from a 1996 conference, C. W. Witham, E.T. Bauder, D. Belk, W.R. Ferren, Jr., and R. Ornduff, eds. California Native Plant Society, Sacramento, California.
- Holland, RF. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Prepared for the California Department of Fish and Game, Sacramento, CA.
- Jennings, M.R. and M.P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Final report submitted to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California. Contract No. 8023. November.
- Keeler-Wolf, T., D.R. Elam, K. Lewis, S.A. Flint. 1998. California Vernal Pool Assessment Preliminary Report. Department of Fish and Game, State of California, Sacramento, California.
- Koenig, M. and M. D. Reynolds. 2009. Yellow-billed Magpie (*Pica nuttalli*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/180>.
- Lowther, Peter E. 2000. Nuttall's Woodpecker (*Picoides nuttallii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/555>.

- Rogers, D.C. 2001. Revision of the North American *Lepidurus* (Notostraca: Crustacea) with a description of a new species previously confused with two other species. *Journal of Crustacean Biology* 21(4): 991-1006.
- Shuford, WD, and T Gardali (eds). 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. *Studies of Western Birds* 1. Western Field Ornithologists, Camarillo, California, and CDFG, Sacramento.
- Stebbins, RC. 2003. *A Field Guide to Western Reptiles and Amphibians*, third edition. The Peterson Field Guide Series, Houghton Mifflin Company, NY.
- [Corps] U.S. Army Corps of Engineers. 2000. Public Notice #200000612 for the Bruce Road Associates Schmidbauer Properties in the City of Chico, California.
- [USDA] U.S. Department of Agriculture, Natural Resources Conservation Service. 2016. WETS Station Chico University Farm CA1715, 1971-2000. Accessed: June 2016.
- [USDA] United States Department of Agriculture, Natural Resources Conservation Service. 2006. Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties.
- [USFWS] United States Fish and Wildlife Service. 2017a. The Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Sacramento, California. 28 pp.
- [USFWS] United States Fish and Wildlife Service. 2017b. Species Lists, Sacramento Fish and Wildlife Office. Available online at: <http://www.fws.gov/sacramento>; most recently accessed: July 2017.
- [USGS] United States Geological Survey. 2016. Chico 7.5-minute quadrangle map.
- [WBWG] Western Bat Working Group. 2016. Species Accounts. Available online at: <http://wbwg.org/western-bat-species/>; Accessed June 2016.
- [WRA] WRA, Inc. 2016a. Biological Resources Assessment: Stonegate Subdivision. City of Chico, Butte County. June 2016.
- [WRA] WRA, Inc. 2016b. Delineation of Waters of the U.S.: Stonegate Subdivision. City of Chico, Butte County. June 2016.
- [WRA] WRA, Inc. 2016c. Rare Plant Survey Report: Stonegate Subdivision. City of Chico, Butte County. June 2016.
- Zeiner, DC, WF Laudenslayer, Jr., KE Mayer, and M White. 1990. *California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals*. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento, CA.

## CULTURAL RESOURCES

City of Chico 2030 General Plan, Cultural Resources and Historic Preservation Element.

Far Western Anthropological Research Group, Inc. (Far Western), Archaeological Survey and Extended Phase I Report for the Stonegate Subdivision Project, Butte County, California, June 2017.

ECORP Consulting, Inc., Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, August 2017

Sub Terra Consulting, Archaeology and Paleontology, Peer review of Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, November 2017

## GEOLOGY AND SOILS

CGS, 2002. California Geomorphic Provinces, Note 36. Revised December.

City of Chico, 2010. General Plan Update Draft Environmental Impact Report, Geology and Soils. September.

USGS, 2016. The Severity of an Earthquake. Website:  
<http://pubs.usgs.gov/gip/earthq4/severitygip.html>. Accessed June 19, 2017.

California Department of Conservation, 2010. Fault Activity Map of California. Website:  
<http://maps.conservation.ca.gov/cgs/fam/>. Accessed June 19, 2017.

CGS and USGS, 2016. Earthquake Shaking Potential for California.

California Department of Conservation, 2017. Website:  
<http://maps.conservation.ca.gov/cgs/informationwarehouse/>. Accessed June 27

City of Chico, 2011, General Plan Safety Element, page 12-11

California Department of Conservation, 2017. Op. cit.

Butte County, 2007. Butte County General Plan, Setting & Trends Report Public Draft. August 2.

California Department of Conservation, 2017. Op. cit.

Butte County, 2007. Op. cit

City of Chico, 2011, General Plan Safety Element, Figure S-3.

## GREENHOUSE GAS EMISSIONS

BCAQMD, 2014. CEQA Air Quality Handbook. October 23.

[https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2015/ghg\\_inventory\\_trends\\_00-15.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2015/ghg_inventory_trends_00-15.pdf)  
accessed June 8, 2017

Butte County Air Quality Management District, 2014. CEQA Air Quality Handbook. October.

City of Chico, 2018. Community-Wide Greenhouse Gas Emissions Inventory 2005-2015.

Bay Area Quality Management District CEQA Guidelines 2011

BAAQMD 2011 Update at D-22 and D-27

United States Census. <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed: March 12, 2018.

Pacific Gas & Electric, 2015. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. November.

CARB, 2013. The California Almanac of Emissions and Air Quality.

Personal correspondence with Bill Mannel, Solid Waste Manager, Butte County.

Personal correspondence with Jason Mandly, Associate Planner, BCAQMD.

## **HAZARDS AND HAZARDOUS MATERIALS**

State Water Resources Control Board, 2011. GeoTracker Environmental Database.

<http://www.envirostor.dtsc.ca.gov/public/>. Accessed May 2016..

City of Chico Resolution No. 72-14 adopting the Butte County Local Hazard Mitigation Plan

<https://www.buttecounty.net/oem/MitigationPlans.aspx>

CAL FIRE. 2007. Available at: [http://www.fire.ca.gov/fire\\_prevention/fhsz\\_maps\\_butte](http://www.fire.ca.gov/fire_prevention/fhsz_maps_butte).

Accessed May 2016.

California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3203.

California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3220.

California Code of Regulations, Title 8, Subchapter 7. General Industry Safety Orders, Section 3221.

## **HYDROLOGY AND WATER QUALITY**

Sacramento River Watershed Program, 2010. The Sacramento River Basin; A Roadmap to Watershed Management. Butte Creek Watershed, Pages 125-130. October.

USGS, 2015. Chico Quadrangle, California-Butte Ca., 7.5-Minute Series,

California Department of Water Resources, 2014. Mid and Upper Sacramento Regional Flood Management Plan. November 10.

Broadbent & Associates, Inc., 2017. First Quarter 2017 Groundwater Monitoring Report; Flyers Energy (former Nella Oil Company) Station No. 50, 2501 Notre Dame Boulevard, Chico, Butte County, California. April.

California Department of Water Resources, 2014. Mid and Upper Sacramento Regional Flood Management Plan. November 10.

Federal Emergency Management Agency (FEMA), 2011. Flood Insurance Rate Map, Butte County, California and Incorporated Areas, 06007C0506E and 06007C0510E. Revised January 6.

California Department of Water Resources (DWR), 2013. FloodSAFE California; Senate Bill 1278/Assembly Bill 1965 Urban Level of Flood Protection Informational Map with Water Surface Elevation Contours. Sacramento River Basin Chico Study Area Chico USGS Quadrangle. Page 6. June 24.

City of Chico, 2011. Chico 2030 General Plan, Safety. April.

Central Valley Regional Water Quality Control Board, 2016. Op. cit.

California Department of Water Resources, 2017. Central Valley Flood Protection Plan; 2017 Update. August.

California Department of Water Resources, 2013. Urban Level of Flood Protection Criteria. November

California Water Service (Cal Water), 2017. Draft SB 610 Water Supply Assessment For Stonegate Vesting Tentative Subdivision Map and General Plan Amendment. September 15.

Rolls Anderson & Rolls Civil Engineers, 2018. Stonegate Floodplain Cross-Sections. February 27

## **LAND USE AND PLANNING**

City of Chico. 2011. 2030 General Plan.

City of Chico. Zoning Maps. 2015. Available at:

[http://www.chico.ca.us/planning\\_services/documents/websitezoning\\_201509.pdf](http://www.chico.ca.us/planning_services/documents/websitezoning_201509.pdf). Accessed August 2016.

## **MINERAL RESOURCES**

City of Chico. 2011. 2030 General Plan.

## **NOISE**

City of Chico 2030 General Plan, Noise Element.

Center for Disease Control. Noise and Hearing Loss Prevention. Available at: [https://www.cdc.gov/niosh/topics/noise/noisemeter\\_html/default.html](https://www.cdc.gov/niosh/topics/noise/noisemeter_html/default.html)

FHWA-RD-77-108 with inputs prepared by Fehr & Peers & BAC analysis

Caltrans Transportation and Construction Vibration Guidance Manual, September 2013

Federal Interagency Committee on Noise (FICON)

City of Chico General Plan Update DEIR (2010)

## POPULATION AND HOUSING

Butte County Association of Governments (BCAG). 2014. Draft Butte County Long-Term Regional Growth Forecasts 2014-2040. Available at: [http://www.bcag.org/documents/demographics/pop\\_emp\\_projections/Growth\\_Forecasts\\_2014-2040\\_draft.pdf](http://www.bcag.org/documents/demographics/pop_emp_projections/Growth_Forecasts_2014-2040_draft.pdf). Accessed August 2016.

BCAG, 2014-2022 BCAG Regional Housing Needs Plan, December 2012

California Department of Finance. 2015. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2014.

California Department of Finance. 2017. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2016–2017.

City of Chico Housing Snapshot 2017. Available at [http://www.chico.ca.us/housing\\_neighborhood\\_services/housing/documents/2017ChicoHousingSnapshot.pdf](http://www.chico.ca.us/housing_neighborhood_services/housing/documents/2017ChicoHousingSnapshot.pdf). Accessed November 2017

California State Housing Element Law, Accessed at <http://www.hcd.ca.gov/hpd/hrc/plan/he> on March 3, 2005.

## PUBLIC SERVICES

Chico Unified School District. Facilities Master Plan. 2014. Available at: <http://www.chicousd.org/Departments/Facilities--Construction/Facilities-Master-Plan-FMP/index.html>. Accessed August 2016.

*City of Chico website. Fire Department. Available at:*

[http://www.chico.ca.us/fire/home\\_page.asp](http://www.chico.ca.us/fire/home_page.asp)

*City of Chico website. Police Department. Available at*

[http://www.chico.ca.us/police/home\\_page.asp](http://www.chico.ca.us/police/home_page.asp)

*City of Chico website. Parks Division. Available at:*

[http://www.chico.ca.us/general\\_services\\_department/park\\_division/park\\_reservations.asp](http://www.chico.ca.us/general_services_department/park_division/park_reservations.asp)

California State University Chico. Caper Acres User Study: A Component of the Master Plan for Future Renovation.

[http://www.chico.ca.us/document\\_library/documents/CaperAcresFinalReport4-18-14TOC.pdf](http://www.chico.ca.us/document_library/documents/CaperAcresFinalReport4-18-14TOC.pdf)

## RECREATION

Chico Area Recreation District website. Available at: <http://www.chicorec.com/CARD-Parks--Facilities/index.html>

City of Chico website. Parks Division. Available at:

[http://www.chico.ca.us/general\\_services\\_department/park\\_division/park\\_reservations.asp](http://www.chico.ca.us/general_services_department/park_division/park_reservations.asp)

California State University Chico. Caper Acres User Study: A Component of the Master Plan for Future Renovation.

[http://www.chico.ca.us/document\\_library/documents/CaperAcresFinalReport4-18-14TOC.pdf](http://www.chico.ca.us/document_library/documents/CaperAcresFinalReport4-18-14TOC.pdf)

## **TRANSPORTATION AND TRAFFIC**

Highway Capacity Manual (Transportation Research Board, 2010)

Butte Regional Transit, 2017

City of Chico General Plan (2011); Transportation Corridor Concept Report

SR 99 (Caltrans, 2017); Transportation Corridor Concept Report, SR 32 (Caltrans, 2014)

City of Chico. 2012 Chico Urban Area Bicycle Plan. Available at:

[http://www.chico.ca.us/building\\_development\\_services/traffic/documents/2012BIKEPLAN.pdf](http://www.chico.ca.us/building_development_services/traffic/documents/2012BIKEPLAN.pdf). Accessed August 2016.

## **UTILITIES AND SERVICE SYSTEMS**

City of Chico General Plan DEIR

California Water Service (Cal Water), 2017. Draft SB 610 Water Supply Assessment For Stonegate Vesting Tentative Subdivision Map and General Plan Amendment. September 15.

CalRecycle (California Integrated Waste Management Board), Facility/Site Summary Details:

Neal Road Recycling and Waste Facility (04-AA-0002). Available at:

<http://www.calrecycle.ca.gov/SWFacilities/Directory/04-AA-0002/Detail/>. Website accessed August 2016.

California Water Service (Cal Water). 2015 Urban Water Management Plan Chico-Hamilton

City District. June 2016. Available at: <https://www.calwater.com/conservation/uwmp/ch/>.

Accessed August 2016.

City of Chico Department of Public Works. Storm Water Management Program. Updated July 2008. Available at:

[http://www.chico.ca.us/building\\_development\\_services/sewer/documents/SWMPRevisedfor07-08annualreport.pdf](http://www.chico.ca.us/building_development_services/sewer/documents/SWMPRevisedfor07-08annualreport.pdf). Accessed August 2016.

U.S. Environmental Protection Agency, 1998

U.S. California Department of Resources Recycling and Recovery, 2006

U.S. Energy Information Administration. 2013. Table CE2.5 Household Site Fuel Consumption in the West Region.

U.S. Energy Information Administration. 2016. Table C19. Electricity Consumption and Conditional Energy Intensity by Census Division.

U.S. Energy Information Administration. 2016. Table C29. Natural Gas Consumption and Conditional Energy Intensity by Census Division.

## **TRIBAL CULTURAL RESOURCES**

City of Chico 2030 General Plan, Cultural Resources and Historic Preservation Element.

Far Western Anthropological Research Group, Inc. (Far Western), Archaeological Survey and Extended Phase I Report for the Stonegate Subdivision Project, Butte County, California, June 2017.

ECORP Consulting, Inc., Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, August 2017

Sub Terra Consulting, Archaeology and Paleontology, Peer review of Cultural Resources Evaluation and Finding of Effect for the Stonegate Subdivision Project, City of Chico, Butte County, California, November 2017

City of Chico Archaeological Sensitivity Map. 2009

## **GENERAL REFERENCES**

City of Chico. Chico 2030 General Plan. 2011. Available at:  
[http://www.chico.ca.us/document\\_library/general\\_plan/documents/\\_CompleteGP\\_Adopted.pdf](http://www.chico.ca.us/document_library/general_plan/documents/_CompleteGP_Adopted.pdf). Accessed August 2016.

City of Chico. Chico 2030 Draft Environmental Impact Report. 2010. Available at:  
[http://www.chico.ca.us/document\\_library/general\\_plan/documents/ChicoDEIR\\_Combined\\_NonAppendices.pdf](http://www.chico.ca.us/document_library/general_plan/documents/ChicoDEIR_Combined_NonAppendices.pdf). Accessed August 2016.

City of Chico Municipal Code. Available at:  
[http://library.amlegal.com/nxt/gateway.dll/California/chico\\_ca/title19landuseanddevelopmentregulations1?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal%3Achico\\_ca\\$anc=JD\\_Title19](http://library.amlegal.com/nxt/gateway.dll/California/chico_ca/title19landuseanddevelopmentregulations1?f=templates$fn=default.htm$3.0$vid=amlegal%3Achico_ca$anc=JD_Title19)  
Accessed August 2016.

City of Chico. Zoning Maps. 2015. Available at:  
[http://www.chico.ca.us/planning\\_services/documents/websitezoning\\_201509.pdf](http://www.chico.ca.us/planning_services/documents/websitezoning_201509.pdf). Accessed August 2016.



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