

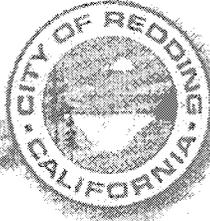
Volume I SALT CREEK HEIGHTS



DRAFT ENVIRONMENTAL IMPACT REPORT

- Tentative Subdivision Map (S-15-07)
 - Rezone Application (RZ-6-07)
- Planned Development Plan (PD-11-07)





CITY OF REDDING

DEVELOPMENT SERVICES DEPARTMENT

PLANNING DIVISION

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June 22, 2009

TO: All Interested Parties

**SUBJECT: NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DRAFT EIR) and NOTICE OF PUBLIC HEARING
Salt Creek Heights Project - Tentative Subdivision Map Application (S-15-07);
Rezoning Application (RZ-6-07); Planned Development Plan Application (PD-11-07)**

The City of Redding has completed the Draft Environmental Impact Report (Draft EIR) for the subject Project. The Draft EIR discusses the potential environmental effects attributable to the proposed Project, which is generally located and described as follows:

The Salt Creek Heights Subdivision Project (S-15-07; RZ-6-07; PD-11-07) is located at 4402 Eureka Way (APNs 204-030-036, -027, and -023) within the western portion of the City of Redding (Township 32 North, Range 5 West, within portions of Sections 32 and 33, Mount Diablo Base and Meridian). The Project site is located along the north side of Eureka Way (SR-299), west of the existing terminus of Buenaventura Boulevard. Salt Creek forms the western and northern boundaries of the proposed Project, and an unnamed tributary, referred to as Gold Run Creek, forms the eastern Project boundary.

The proposed Project consists of approximately 272.9 acres of undeveloped land, with approximately 145.5 acres deemed suitable for development. The Project proposes the development of 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units) designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites. More specifically, the proposed Project would construct the following: 12 single-family units with an approximate 3,500-square-foot building on each lot, 49 single-family units with approximately 3,000-square-foot buildings, 187 single-family units with approximately 2,500-square-foot buildings, 96 clustered, garden court single-family units totaling approximately 5,800 square feet, and 96 apartment units totaling approximately 38,000 square feet. In addition, the Project proposes a 13.9-acre neighborhood park with amenities such as a soccer field, a softball field, basketball courts, a frisbee golf course, a ball wall, and playgrounds. The Project would also include construction of an internal circulation network, utility connections, and storm-drainage improvements necessary to serve the lots.

The following actions are being requested as part of this proposed Project:

- *Tentative Subdivision Map Application S-15-07, Salt Creek Heights Subdivision.* Subdivide property to create 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units) designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites.
- *Planned Development Application PD-11-07, Salt Creek Heights Planned Development Plan.* A planned development request to allow single-family residential lots in an "RM" (Residential Multiple Family District) and lot-size and configuration exceptions to accommodate the various housing styles and to establish overall project-design parameters.

- *Rezoning Application RZ-6-07.* Rezone the entire Project site to apply the "PD" (Planned Development Overlay District).
- *Salt Creek Heights Development Agreement.* An agreement between the Project Applicant and the City allowing credit against the Project's park development fee obligations in exchange for construction of a public neighborhood park as a component of Project development. The Development Agreement also establishes the timing for construction of off-site sewer improvements to be completed by the Project Applicant.

The Draft EIR found that environmental effects, after mitigation, would be reduced to below a level of significance.

The Draft EIR is hereby made available for public review and comment. The public review period for this document has a duration of 45 days beginning on Monday, June 22, 2009, and ending on Thursday, August 6, 2009. You are invited to submit written comments on the Draft EIR to the City's contact person at the address provided below by August 6, 2009.

It is further noted that a hearing accepting public testimony on the Draft EIR will be held before the Planning Commission of the City of Redding during the public review period. The public hearing will be focused on the objectivity and adequacy of the Draft EIR in discussing potential impacts upon the environment, ways in which adverse effects might be mitigated, and alternatives to the proposed Project consistent with the intent of the California Environmental Quality Act. The hearing will begin at 4 p.m., or as soon thereafter, on Tuesday, July 28, 2009, in the City Council Chambers, located at 777 Cypress Avenue, in Redding, California.

Public comment regarding the proposed Project and/or adequacy of the Draft EIR, including requests for additional environmental review, will be accepted up to 5 p.m., on Thursday, August 6, 2009. If you challenge the action taken on this proposed Project in court, you may be limited to raising only those issues raised at the public hearing, or in written correspondence delivered to the City of Redding prior to August 6, 2009. If your property is rented or leased, we request that you provide your tenant(s) notice of this public hearing.

Copies of the Draft EIR are available for review or purchase at the Development Services Department at the address below. Copies of the Draft EIR are also available for public review at the Redding Library, located at 1100 Parkview Avenue, Redding, CA. Electronic copies of the Draft EIR and Technical Appendix are available for review and/or download at the City of Redding's website located online at: www.ci.redding.ca.us/devserv/envdocs/EnvDocsmstr.html.

Please contact Mr. Zachary Bonnin, Associate Planner, at (530) 225-4020, 777 Cypress Avenue, Redding, CA 96001, if you have further questions.

Sincerely,



Douglas DeMallie
Planning Manager
City of Redding Development Services Department

Administrative Draft EIR Completed: December 2008
Screencheck Draft EIR Completed: April 2009
Draft EIR Completed: June 2009
Final EIR Completed: ____ 2009

Volume I

**DRAFT
ENVIRONMENTAL IMPACT REPORT**

SALT CREEK HEIGHTS SUBDIVISION

**Tentative Subdivision Map Application (S-15-07)
Rezone Application (RZ-6-07)
Planned Development Plan (PD-11-07)**

SCH NO. 2008092020

Lead Agency:



Development Services Department
777 Cypress Avenue
Redding, CA 96001
(530) 225-4020

Technical Assistance by:

RBF Consulting
2101 Arena Boulevard, Suite 250
Sacramento, CA 95834

June 2009

JN 60-100416



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LIST OF ACRONYMS AND SHORT TERMS

AB	Assembly Bill
ADT	Average Daily Traffic
AFY	Acre Feet per Year
ANSI	American National Standards Institute
APOC	Air Pollution Control Officer
AQMD	Air Quality Management District
AST	Above Ground Storage Tanks
ASTM	American Society for Testing and Materials
BAF	Basal Area Factor
BAMM	Best Available Mitigation Measures
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
Bureau	U.S. Bureau of Reclamation
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation - District 02
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
C&D	Construction & Demolition
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	Chlorofluorocarbons
CFS	Cubic Feet per Second
CHP	California Highway Patrol
CIP	Capital Improvement Plan
CFR	Code of Federal Regulations
City	City of Redding
CMP	Congestion Management Plan
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
Corps	United States Army Corps of Engineers
County	County of Shasta
CRHR	California Register of Historic Resources
CWA	Clean Water Act
CY	Cubic Yards
dB	Decibel
dba	Decibel A-Weighted
DBH	Diameter at Breast Height
DMA	Disaster Mitigation Act
DO	Dissolved Oxygen
DOF	California Department of Finance
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substance Control
EFHA	Essential Fish Habitat Assessment
EIR	Environmental Impact Report



EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
ESU	Evolutionary Significant Units
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
General Plan	City of Redding 2000-2020 General Plan
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GPS	Global Positioning System
GWP	Global Warming Potential
HCFC	Hydrochlorofluorocarbons
HCM	Highway Capacity Manual
HVAC	Heating, Ventilation, and Air Conditioning
IPCC	Intergovernmental Panel in Climate Change
ITE	Institute of Transportation Engineers
IS	Initial Study
km	Kilometer(s)
LAFCo	Shasta County Local Agency Formation Commission
Leq	Equivalent Noise Level
Ldn	Day/Night Average Noise Level
LOS	Level-of-Service
MBTA	Migratory Bird Treaty Act
MDBM	Mount Diablo Base and Meridian
MGD	Million Gallons per Day
MM	Mitigation Measure(s)
mph	Miles Per Hour
MSA	Federal Magnuson-Stevens Fishery Conservation and Management Act
MSL	Mean Sea Level
N	Nitrogen
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Services
NOx	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	Northern Sacramento Valley Planning Area
OEHHA	State Office of Environmental Health Hazard Assessment
OHWM	Ordinary High Water Mark
OPR	California Office of Planning and Research
OSFM	Office of the State Fire Marshal
P	Phosphorus
pCi/l	Pico-curies Per Liter of Air
PFC	Perfluorocarbons
PM	Particulate Matter
PPM	Parts per Million
PPV	Peak Particle Velocity
PRC	Public Resources Code (California)
Project	Salt Creek Heights Subdivision Project
RABA	Redding Area Bus Authority



RBF	RBF Consulting
RCNM	Roadway Construction Noise Model
REC	Recognized Environmental Condition
REU	Redding Electric Utility
RH	Relative Humidity
RMC	City of Redding Municipal Code
RMS	Root Mean Square Velocity
ROW	Right-of-Way
RTP	Regional Transportation Plan
RWU	Redding Water Utility
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAQMD	Shasta County Air Quality Management District
SMM	Standard Mitigation Measures
sq/ft	Square Feet
SR	State Route
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWQIP	City of Redding Storm Water Quality improvement Plan
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TIF	Transportation Impact Fee
TOC	Total Organic Carbon
TMP	Traffic Management Plan
TKN	Total Kjeldahl Nitrogen
u/a	Units per Acre
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compounds



SECTION 1.0: Introduction and Purpose



1.0 INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE EIR

The City of Redding is the Lead Agency under the *California Environmental Quality Act* (CEQA), and is responsible for preparing the Environmental Impact Report (EIR) for the Salt Creek Heights Subdivision project (State Clearinghouse No. 2008092020). The principle State *CEQA Guidelines* sections governing content of this document are §15120 through §15132 (Content of an EIR), and §15161 (Project EIR). The purpose of this EIR is to review the existing conditions, analyze potential environmental impacts, and identify feasible mitigation measures to reduce potentially significant effects related to the proposed Project.

The EIR has been prepared as a Project EIR, addressing the environmental effects of the proposed Project. In accordance with §15121 of CEQA, a primary purpose of this EIR is to provide decision makers and the public with specific information regarding the environmental effects associated with development of the site. This EIR also identifies ways to minimize the significant effects and describes reasonable alternatives to the proposed Project. Mitigation measures are provided which may be adopted as Conditions of Approval in order to reduce the significance of impacts resulting from the proposed Project. In addition, this EIR is the primary reference document in the formulation and implementation of a mitigation monitoring program for the proposed Project.

The City of Redding, which has the principle responsibility of processing and approving the proposed Project, and other public agencies (e.g., responsible and trustee agencies; refer to Section 1.5 of this EIR) that may use this EIR in the decision making or permit process will consider the information in this EIR, along with other information that may be presented during the CEQA process. Environmental impacts are not always mitigable to a level considered less than significant; in those cases, impacts are considered significant unavoidable impacts. In accordance with §15093(b) of the State *CEQA Guidelines*, if a public agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project, based on the Final EIR and any other information in the public record for the project. This is termed, per §15093 of the State *CEQA Guidelines*, a “statement of overriding considerations.”

This document analyzes the environmental effects of the proposed Project to the degree of specificity appropriate to the current proposed actions, as required by §15146 of the State *CEQA Guidelines*. The analysis considers the actions associated with the proposed Project to determine the short-term and long-term effects associated with their implementation. This EIR discusses both the direct and indirect impacts of the proposed Project, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. CEQA requires the preparation of an objective, full disclosure document to inform agency decision makers and the general public of the direct and indirect environmental effects of the proposed action; provide mitigation measures to reduce or eliminate significant adverse effects; and identify and evaluate reasonable alternatives to the proposed Project.



1.2 COMPLIANCE WITH CEQA

This Draft EIR is subject to a 45-day review period by responsible and trustee agencies and interested parties. §15087 of the State *CEQA Guidelines* lists optional procedures for noticing, including publication in a newspaper, posting on-site, or mailing to owners of a property or properties contiguous to the site. In accordance with the provision of §15085(a) and §15087(a)(1) of the State *CEQA Guidelines*, as amended, the City of Redding, serving as the Lead Agency, will: 1) publish a notice of availability of a Draft EIR in the Record Searchlight, a newspaper of general circulation, and 2) will prepare and transmit a Notice of Completion (NOC) to the State Clearinghouse (proof of publication is available at the office of the Lead Agency).

Any public agency or members of the public desiring to comment on the Draft EIR must submit their comments in writing to the individual identified on the document's NOC prior to the end of the public review period. During the public review period, the City of Redding will hold a regularly-scheduled public hearing regarding the Draft EIR. The public will be afforded the opportunity to orally comment on the Draft EIR at the public hearing. Such comments shall be recorded and shall have the same standing and response requirements as written comments provided during the public review period. Upon the close of the public review period, the City will then proceed to evaluate and prepare responses to all relevant oral and written comments received from both citizens and public agencies during the public review period.

The Final EIR will consist of the Draft EIR, revisions to the Draft EIR, and responses to comments addressing concerns raised by responsible agencies and reviewing parties. After the Final EIR is completed and at least 10 days prior to its certification, a copy of the Responses to Comments (Volume III of the Final EIR) will be transmitted to agencies providing written or oral comments on the Draft EIR.

1.3 EIR SCOPING PROCESS

In compliance with the State *CEQA Guidelines*, the City of Redding has taken steps to maximize opportunities for interested individuals, parties, and agencies to participate in the environmental process. During the preparation of the Draft EIR, an effort was made to contact various federal, state, regional, and local government agencies and other interested parties to solicit comments and inform the public of the proposed Project. Accordingly, an Initial Study and Notice of Preparation (NOP) were distributed in September 2008.

INITIAL STUDY

In accordance with §15063(a) of the State *CEQA Guidelines*, as amended, the City undertook the preparation of an Initial Study. The Initial Study determined that a number of environmental issue areas may be impacted by the construction and buildout of the proposed Salt Creek Heights Subdivision project. As a result, the Initial Study determined that the Draft EIR should address the Project's significant impacts on a variety of environmental issue areas that are addressed in Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES of this Draft EIR. Based on the Initial Study, no impacts on mineral resources, recreation, and agricultural resources are anticipated as a result of the proposed Project. Therefore, these issues are addressed in Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT, in this EIR. Although land use and planning, population and housing, and aesthetics were identified as having less than significant impacts in the Initial Study, further analysis regarding these environmental issue areas is provided in Section 5.0 of this EIR.



NOTICE OF PREPARATION

Pursuant to the provision of §15082 of the State *CEQA Guidelines*, as amended, the City of Redding circulated an NOP to public agencies, special districts, and members of the public requesting such notice for a 30-day period commencing on September 8, 2008, and concluding on October 7, 2008. The purpose of the NOP was to formally convey that the City is preparing a Draft EIR for the proposed Project, and that as Lead Agency, was soliciting input regarding the scope and content of the environmental information to be included in the EIR. The Initial Study was circulated with the NOP. The NOP, Initial Study, and responses to the NOP are provided in Appendix 15.1 of this EIR.

RESPONSES TO THE NOTICE OF PREPARATION

The following specific environmental concerns were raised by responses to the NOP for the proposed Project between September 8, 2008 and October 7, 2008. The numerical reference in parenthesis identifies the EIR Section in which the analysis is provided. Copies of the NOP responses are contained in Appendix 15.1.

- Potential Redding Area Bus Authority (RABA) bus stop locations (refer to Section 5.4, TRAFFIC AND CIRCULATION).
- Potential archaeological and cultural resources impacts (refer to Section 5.8, CULTURAL RESOURCES).
- Detention basin design that discourages the spreading of water and vegetation growth (mosquito control operations) (refer to Section 5.11, HYDROLOGY AND WATER QUALITY).
- Potential impacts to Redding Police Department (response times, staffing, etc.) (refer to Section 5.9, PUBLIC SERVICES AND UTILITIES).
- Potential impacts to Redding Fire Department and concerns relative to fire suppression (refer to Section 5.2, PUBLIC HEALTH AND SAFETY, and Section 5.9, PUBLIC SERVICES AND UTILITIES).

EARLY CONSULTATION (SCOPING)

On Tuesday, September 23, 2008, the City of Redding held a public scoping meeting for the proposed Salt Creek Heights Subdivision project. The meeting was held with the specific intent of affording interested individuals/groups and public agencies a forum in which to orally present input directly to the Lead Agency, in an effort to assist in further refining the intended scope and focus of the EIR as described in the NOP and Initial Study. General concerns from the community were verbally submitted and included the following:

- Concerns regarding existing poor water pressure at adjacent developments and the proposed Project's potential contribution to decreasing water pressure (refer to Section 5.9, PUBLIC SERVICES AND UTILITIES).
- Concern regarding the visual impacts and perceived blighted conditions along the Sacramento River Trail and Sacramento River corridors (refer to Section 5.3, AESTHETICS, LIGHT AND GLARE);



- The following traffic and safety concerns were noted: (1) Delete access from Buenaventura Boulevard and only provide access via Eureka Way (SR-299). Condition the proposed Project to eliminate construction traffic from utilizing Buenaventura Boulevard (necessitating construction of the Eureka Way (SR-299) connector during Phase I of the proposed development; (2) Increasing congestion along Eureka Way (SR-299) and further impacting ingress and egress for local residents; (3) line-of-sight and signalization concerns (refer to Section 5.4, TRAFFIC AND CIRCULATION).
- Concerns regarding how the proposed Project's sewer be treated/handled and if sewer infrastructure will change for existing residents on septic (refer to Section 5.9, PUBLIC SERVICES AND UTILITIES).
- Request made for a private security force. Concerns relative to fire suppression for the development (refer to Section 5.2, PUBLIC HEALTH AND SAFETY, and Section 5.9, PUBLIC SERVICES AND UTILITIES).
- General concerns regarding the apartment component of the proposed Project which is viewed as being out of character with western Redding. Justification for the densities as proposed (refer to Section 5.1, LAND USE AND RELEVANT PLANNING).
- Impacts to deer, turkeys, quail, coyotes, and other wildlife (refer to Section 5.7, BIOLOGICAL RESOURCES).
- Concerns regarding long-term water quality impacts to Salt Creek and the Sacramento River (refer to Section 5.11, HYDROLOGY AND WATER QUALITY).

This EIR focuses primarily on changes in the environment that would result from the proposed Project. The EIR identifies potential impacts resulting from the construction and operation of the proposed Project and provides measures to mitigate potentially significant impacts. Those impacts which cannot be mitigated to less than significant levels are also identified. This EIR addresses impacts in the following areas:

- Land Use and Relevant Planning (Section 5.1);
- Public Health and Safety (Section 5.2);
- Aesthetics, Light & Glare (Section 5.3);
- Traffic and Circulation (Section 5.4);
- Noise (Section 5.5);
- Air Quality (Section 5.6);
- Biological Resources (Section 5.7);
- Cultural Resources (Section 5.8);
- Public Services and Utilities (Section 5.9);
- Geologic Resources (Section 5.10); and
- Hydrology and Water Quality (Section 5.11).



1.4 ORGANIZATION OF THE EIR

This EIR is organized into 15 sections. Section 1.0, INTRODUCTION AND PURPOSE, provides CEQA compliance information. Section 2.0, EXECUTIVE SUMMARY, provides a brief Project description and summary of the environmental impacts and mitigation measures. Section 3.0, PROJECT DESCRIPTION, provides a detailed Project description indicating Project location, background and history, Project characteristics, phasing and objectives, as well as associated discretionary actions required. Section 4.0, BASIS FOR CUMULATIVE ANALYSIS, describes the approach and methodology for the cumulative analysis. Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES contains a detailed environmental analysis of the existing conditions, Project impacts, recommended mitigation measures, and unavoidable significant impacts. The analysis of each environmental category in this section is organized as follows:

- “Existing Conditions” describes the physical conditions that exist at the time the notice of preparation was published and which may influence or affect the issue under investigation.
- “Significance Criteria” provides the thresholds, which are the basis for conclusions of significance. The primary resource for the criteria is Appendix G of the State *CEQA Guidelines* (California Code of Regulations, §15000-15387).
- “Project Impacts” describes potential environmental changes to the existing physical conditions, which may occur if the proposed Project is implemented.
- “Cumulative Impacts” describes potential environmental changes to the existing physical conditions that may occur if the proposed Project is implemented together with all other past, present, and reasonably foreseeable probable future projects producing related or cumulative impacts.
- “Mitigation Measures” are those specific measures that may be required of the Project in order to avoid a significant impact; minimize a significant impact; rectify a significant impact by restoration; reduce or eliminate a significant impact over time by preservation and maintenance operations; or compensate for the impact by replacing or providing substitute resources or environment.
- “Level of Significance” discusses whether the Project’s impacts and the Project’s contribution to cumulative impacts can be reduced to levels that are considered less than significant.

Section 6.0, LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT, discusses significant environmental changes that would be involved in the proposed action, should it be implemented, and discusses growth inducing impacts of the proposed Project. Section 7.0, ALTERNATIVES TO THE PROPOSED PROJECT, describes a reasonable range of alternatives to the Project or to the location of the Project that could avoid or substantially lessen the significant impacts of the Project and still feasibly attain the basic Project objectives. Section 8.0, INVENTORY OF MITIGATION MEASURES, lists mitigation measures proposed to avoid or substantially lessen the significant impacts. Section 9.0, LEVEL OF SIGNIFICANCE AFTER MITIGATION, describes those impacts, which remain significant following mitigation. Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT, provides an explanation of potential impacts which have been determined not to be significant. Section 11.0, ORGANIZATIONS AND PERSONS CONSULTED, identifies all Federal, State or local agencies, other organizations, and individuals consulted. Section 12.0, BIBLIOGRAPHY, identifies reference sources for the EIR. Section 13.0,



MITIGATION MONITORING PROGRAM, identifies responsibilities for monitoring mitigation. Section 14.0, COMMENTS AND RESPONSES, will be included in the Final EIR and will provide comments and responses pertaining to the Draft EIR. Section 15.0, TECHNICAL APPENDIX, contains technical documentation prepared for the proposed Project.

1.5 RESPONSIBLE AND TRUSTEE AGENCIES

Certain projects or actions undertaken by a Lead Agency require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Such other agencies are referred to as Responsible Agencies and Trustee Agencies. Pursuant to §15381 and §15386 of the State *CEQA Guidelines*, as amended, Responsible Agencies and Trustee Agencies are respectively defined as follows:

“Responsible Agency means a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA the term ‘Responsible Agency’ includes all public agencies other than the Lead Agency which have discretionary approval power over the project.” (§15381)

“Trustee Agency means a State agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. Trustee Agencies include” (§15386, part)

Responsible and Trustee Agencies and other entities that may use this EIR in their decision-making process or for informational purposes include, but may not be limited to, the following:

- California Department of Fish and Game;
- California Department of Transportation - District 02;
- Native American Heritage Commission;
- Office of Historic Preservation;
- Redding Elementary School District;
- Regional Water Quality Control Board;
- Shasta County Department of Resource Management: Environmental Health Division;
- Shasta County Office of Education;
- Shasta Union Elementary School District,
- Shasta Union High School District;
- U.S. Army Corps of Engineers;
- U.S. Fish and Wildlife Service; and
- Western Shasta Resource Conservation District.

1.6 INCORPORATION BY REFERENCE

Pertinent documents relating to this EIR have been cited in accordance with §15150 of the State *CEQA Guidelines*, which encourages “incorporation by reference” as a means of reducing redundancy and length of environmental reports. The following documents, which are available for public review at the City of Redding, are hereby incorporated by reference into this EIR. Information contained within these documents



has been utilized for each section of this EIR. A brief synopsis of the scope and content of these documents is provided below:

- *City of Redding 2000–2020 General Plan*, adopted October 3, 2000. Elements updated on various dates. The *General Plan* is the long-range planning guide for growth and development for the City of Redding. The *General Plan* has two basic purposes: 1) to identify the goals for the future physical, social, and economic development of the City; and 2) to describe and identify policies and actions adopted to attain those goals. It is a comprehensive document that addresses seven mandatory elements/issues in accordance with State law. These elements include Land Use, Housing, Circulation, Conservation, Open Space, Noise, and Public Safety. Other optional issues that affect the City, including Public Facilities and Services, Recreation, Air Quality, and Economic Development, have also been addressed in the *General Plan*. The City's *General Plan* was utilized throughout this EIR as the fundamental planning document governing development on the Project site. Background information and policy information from the Plan is cited in several sections of the EIR.
- *City of Redding Final Environmental Impact Report for the Draft General Plan*, April 19, 2000. The purpose of the *General Plan EIR* was to assess all potential environmental impacts that could occur as a result of buildout of the *General Plan*. The analysis included evaluation of the following issues: Land Use, Housing and Population; Transportation and Circulation; Public Facilities and Services (Water, Wastewater and Storm Drainage); Other Public Facilities and Services (Law Enforcement, Fire Protection Services, Schools, Parks and Recreation, Solid Waste, Electricity and other Public Utilities); Natural Environment; and Health and Safety.
- *City of Redding General Plan Background Report*. May 1996, Revised July 1998. The Background Report contains background information compiled for the *General Plan*. The report addresses all the significant issues addressed in the *General Plan* and also serves as the “environmental setting” portion of the *General Plan EIR*. The Background Report contains 11 sections, including: Land Use, Community Form, Population, Economic Conditions, Fiscal and Budgetary Conditions, Transportation and Circulation, Public Facilities and Services, Recreational, Archaeological and Historic Resources, Natural Resources and Air Quality, Health and Safety, and Noise.
- *City of Redding Local Hazard Mitigation Plan*. September 2005. The Disaster Mitigation Act of 2000 (DMA), commonly known as the 2000 Stafford Act amendments, was approved by Congress on October 10, 2000. On October 30, 2000, the President signed the bill into law, creating Public Law 106-390, amended the Stafford Act with regards to hazard mitigation planning, primarily by moving from post-disaster mitigation to pre-disaster mitigation, planning and projects. The DMA 2000 emphasizes greater interaction between State and local hazard identification, mitigation planning and other mitigation activities. In addition, both the State and Federal Governments have a continuing interest in streamlining the mitigation planning, implementation and project funding process. The City of Redding *Local Hazard Mitigation Plan's* purpose is to fulfill the federal DMA, which calls for all communities to prepare mitigation plans. The Plan includes resources and information to assist City residents, public and private sector organizations, and others interested in participating in planning for hazards. The Plan provides a list of mitigation activities that may assist the City in reducing risk and preventing loss from future hazard events. The Federal Emergency Management Agency (FEMA) approved the Plan on September 29, 2005, thus making Redding eligible for disaster relief and mitigation funds.



- *City of Redding Zoning Codes and Amendments.* The *Zoning Ordinance* (Title 18) of the City of Redding *Municipal Code* (RMC) offers a precise land-use plan for the City to “promote the growth of the City in an orderly manner and to promote and protect the public health, safety, peace, comfort and general welfare.” The City is divided into 29 districts in order to classify, regulate, restrict, and segregate the use of land, buildings, and structures, to regulate and limit the type, height, and bulk of buildings and structures in the various districts and zones, to regulate the areas of yards and other open areas about and between buildings and structures, and to regulate the density of population.
- *City of Redding Water Master Plan 2000.* The *City of Redding Water Master Plan 2000* presents an evaluation and assessment of the current state of the City’s water system, and provides a framework for addressing water system operations, capital improvements and funding, water supply, and City management policy related to the water system.
- *City of Redding Wastewater Utility Master Plan 2002.* The *Wastewater Utility Master Plan 2002* addresses the City’s sewer collection and wastewater treatment systems needs for the planning periods of Year 2005, Year 2010, and ultimate buildout of the City’s *General Plan*. The Plan evaluates both the collection system and the wastewater treatment facilities for the Clear Creek and Stillwater service areas.
- *City of Redding Urban Water Master Plan 2005.* The *Urban Water Master Plan* (UWMP) was developed to comply with the intent of Assembly Bill 797, Division 6, Part 2.6 of the California Water Code. The City intends that implementation of the UWMP will result in an increase in public conservation awareness and enhance the efficiency of water use. The UWMP is filed with the State Department of Water Resources in years ending in five and zero.

Project Environmental Studies. As part of the preparation of this EIR, the following studies, which are included in Section 15.0, TECHNICAL APPENDIX, were prepared or utilized to develop baseline information and Project-related impact discussions:

- *Biological Resources Report / Wetland Delineation*, prepared by ESA: Determines if any plants or animals listed by State or Federal agencies as endangered, rare, threatened, or of special concern occur on the Project site and furthermore, identifies potential critical habitat. The wetland delineation report describes those features within the Project area that may be considered waters of the United States (U.S.), and are therefore subject to Section 404 of the Clean Water Act (CWA).
- *Cultural Resources Survey*, prepared by ENPLAN: Assesses the cultural resources of the Project site through a cultural resources records search and archaeological field survey.
- *Traffic Impact Analysis Report*, prepared by Omni-Means: Evaluates the potential traffic impacts created by the proposed Project on existing and future traffic operations in the vicinity of the Project.
- *Storm Drain Analysis*, prepared by Sharrah Dunlap Sawyer, Inc.: Evaluates the pre- and post-development peak flows for the Salt Creek and Gold Run Basins.
- *Phase I Site Assessment*, prepared by ENPLAN: Identifies any recognized environmental conditions (i.e. any hazardous substances or petroleum products) in connection with the proposed Project site.



- *Tree Evaluation Plan*, prepared by Cedric D. Twight: Documents tree resources in the Project area and considers and evaluates the relative beneficial qualities of the groups and individual trees within the Project area in accordance with the Redding *Tree Management Ordinance* (RMC Chapter 18.45).
- *Preliminary Soils Report*, prepared by SHN Consulting Engineers & Geologists, Inc.: Provides preliminary soil data, based on observations of surface features and exposures, which were used to evaluate potential impacts of site conditions on the proposed Project. Conclusions regarding the risk of adverse effects from geologic hazards are discussed.

1.7 PREPARERS OF THE DRAFT EIR

The City of Redding is the lead agency in the preparation of the EIR. RBF Consulting is the environmental consultant retained by the City to prepare the EIR for the proposed Project. The names and contact information of the consultants who prepared the technical studies that are a part of this EIR are provided in Section 11.0, ORGANIZATIONS AND PERSONS CONSULTED.

Lead Agency..... City of Redding Development Services Department
 777 Cypress Avenue
 Redding, CA 96001

Project Applicant.....Sierra Pacific Industries
 P.O. Box 496014
 Redding, CA 96049

Applicant Representative....Sharrah Dunlap Sawyer, Inc.
 6590 Lockheed Drive
 Redding, CA 96002

Environmental Consultant...RBF Consulting
 2101 Arena Boulevard, Suite 250
 Sacramento, CA 95834

1.8 REVIEW OF THE DRAFT EIR

This Draft EIR will be distributed to responsible and trustee agencies, other affected agencies, County of Shasta, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with PRC §21092 (b)(3). The Notice of Completion (NOC) of the Draft EIR will also be distributed as required by CEQA. During the 45-day public review period, the Draft EIR, including technical appendices, is available for review at the City of Redding Development Services Department, 777 Cypress Avenue, Redding, California 96001 and the City of Redding Public Library located at 1100 Parkview Avenue, Redding, California 96001 (530-245-7250).



Written comments on the Draft EIR should be addressed to:

Mr. Zachary Bonnin, Associate Planner
City of Redding Development Services Department
777 Cypress Avenue
Redding, CA 96001

Upon completion of the 45-day public review period, written responses to all substantive environmental issues raised will be prepared and available for review prior to the public hearing before the Redding City Council at which the certification of the Final EIR will be considered. These environmental comments and their responses, as well as any proposed changes in the Draft EIR based on the comments, will be included as part of the environmental record for consideration by decision-makers for the proposed Project.



SECTION 2.0: Executive Summary



2.0 EXECUTIVE SUMMARY

The Executive Summary represents a synopsis of the data and analysis contained throughout this Environmental Impact Report (EIR). This section includes a summary of the Project, environmental analysis, mitigation measures, significance after mitigation, and alternatives. Please refer to the appropriate section of this EIR for further detail.

2.1 PROJECT SUMMARY

EXISTING CONDITIONS

The Salt Creek Heights Subdivision project (S-15-07; RZ-6-07; PD-11-07) is located at 4200 Eureka Way (APN's 204-030-036, -027, and -023), within the western portion of the City of Redding (Township 32 North, Range 5 West, within portions of Sections 32 and 33, Mount Diablo Base and Meridian). The Project site is located along the north side of Eureka Way (SR-299), west of the existing terminus of Buenaventura Boulevard. Salt Creek forms the western and northern boundaries of the proposed Project, and an unnamed tributary, referred to as Gold Run Creek, forms the eastern Project boundary. The approximate 272.9-acre Project site is currently undeveloped land, portions of which were previously mined. The proposed Project's topography varies from a nearly flat terrace at the center of the site, to moderately steep to very steep canyons. At the landscape level, the topography consists of incised canyons that slope to the northeast towards the Sacramento River. On-site elevation ranges from 520 feet above mean sea level (msl) to 740 feet above msl. Habitats occurring within and adjacent to the proposed Project include annual grassland, mixed chaparral, blue oak woodland, open water, riparian wetland, and seasonal wetlands. On-site uses are limited to electric utility corridors, with several utility maintenance roads traversing the proposed Project site.

PROJECT DESCRIPTION (SUMMARY)

The proposed Project consists of approximately 272.9 acres of undeveloped land, with approximately 145.5 acres of the 272.9 acres deemed suitable for development. The Project proposes the development of 440 residential units designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites. More specifically, the proposed Project would construct the following: 12 single-family units with an approximate 3,500 square foot building on each lot, 49 single-family units with approximately 3,000 square foot buildings, 187 single-family units with approximately 2,500 square foot buildings, 96 clustered, garden court single-family units totaling approximately 5,800 square feet, and 96 apartment units totaling approximately 38,000 square feet. In addition, the Project proposes a 13.9 acre neighborhood park with amenities such as a soccer field, a softball field, basketball courts, a frisbee golf course, a ball wall, and play grounds. The Project would also include construction of an internal circulation network, utility connections, and storm drainage improvements necessary to serve the lots.

The following actions are being requested as part of this proposed Project:

- *Tentative Subdivision Map Application S-15-07, Salt Creek Heights Subdivision.* Subdivide property to create 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units) designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites.



- *Planned Development Application PD-11-07, Salt Creek Heights Planned Development Plan.* A planned development request to allow single-family residential lots in an "RM" (Residential Multiple Family District) and lot-size and configuration exceptions to accommodate the various housing styles and to establish overall project-design parameters.
- *Rezoning Application RZ-6-07.* Rezone the entire Project site to apply the "PD" (Planned Development Overlay District).
- *Salt Creek Heights Development Agreement.* An agreement between the Project Applicant and the City allowing credit against the Project's park and trails development fee obligations in exchange for construction of a public neighborhood park as a component of Project development. The Development Agreement also establishes the timing for construction of off-site sewer improvements to be completed by the Project Applicant, including a reimbursement agreement between the Project Applicant and City.

Proposed Zoning Designation

The Project proposes to add the "PD" (Planned Development Overlay District) to the existing "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space) zoning designations. The "PD" Overlay District is intended to facilitate development of properties designated for residential and commercial uses and for those areas designated as mixed-use neighborhood overlay areas in the *General Plan*. This process is used where greater flexibility in design is desired to provide a more efficient use of land than would be possible through strict application of conventional zone or land use district regulations and to assist in the development of housing opportunities for lower-income families and individuals. This flexibility also facilitates project design that may not otherwise be achieved under the provisions of the base zoning districts. Another purpose of this overlay district is to facilitate, where appropriate, the development of housing for low- and moderate-income individuals and families in furtherance of the goals and policies of the Housing Element of the *General Plan*. In these cases, design considerations still play a role to ensure that the residential developments constructed are a positive addition to the community and provide a desirable living environment for residents.

Project Site Access

The extension of Buenaventura Boulevard is planned to serve as a primary access to the proposed development (labeled Road O on the proposed site plan). The second proposed access will be provided by a new street approximately 2,375 feet east of the Eureka Way (SR-299)/Lower Springs Road intersection. This internal road (labeled Road B on the proposed site plan) will provide connectivity from this access point to the proposed Project. The third access point is located along Eureka Way (SR-299) at its intersection with Lower Springs Road (labeled Road A on the proposed site plan).

Infrastructure Improvements

The proposed Project will include all necessary on- and off-site sewer and water infrastructure improvements to support the Project. The proposed Project's sanitary sewer and domestic water infrastructure consists of connection to off-site mains that originate near Eureka Way (SR-299) and the provision for on-site delivery systems necessary to support the proposed Project.



Grading

Grading operations will occur during eight separate phases. The majority of grading for the Project is within the gently sloped terrace areas in the higher elevations of the site. Approximately one-third of the total Project area will be graded for building sites, including approximately 690,000 cubic yards (CY) of cut and approximately 600,000 CY of fill. This will result in balanced grading by borrowing any needed cut or placing any additional fill on an adjacent phase. The total grading will be balanced on-site; there will be no off-site transportation of grading materials. Table 3-2, EARTHWORK VOLUME SUMMARY, in Section 3.0, PROJECT DESCRIPTION, describes the import/export quantities and expected soil shrink potential to achieve the grading balance.

Phasing

Assuming economic conditions are conducive for buyers to purchase homes, implementation of the proposed Project will be constructed in eight phases over an anticipated eight year period. It is assumed that site work associated with each individual phase will take a single construction season (approximately eight months), depending upon factors such as weather conditions and acquisition of necessary approvals from the various utility purveyors and resource agencies.

2.2 SUMMARY OF ENVIRONMENTAL IMPACTS

Table 2.1, IMPACTS AND PROPOSED MITIGATION MEASURES, contains a brief summary of the impacts identified and analyzed in Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES, of this EIR. Refer to the appropriate EIR section for additional information.



**TABLE 2-1
Impacts and Proposed Mitigation Measures**

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p>5.1 LAND USE AND RELEVANT PLANNING</p> <p><i>Impact 5.1-1: Project construction activities may temporarily result in increased amounts of local airborne and particulate matter, as well as an increase in traffic congestion, noise levels, and visual impacts.</i></p>	<p>Short-Term Impacts (Construction)</p> <p>MM 5.1-1: Implement short-term construction mitigation measures outlined in Section 5.3, AESTHETICS, LIGHT AND CLARE and Section 5.6, AIR QUALITY.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.1-2: Implementation of the proposed Project could potentially conflict with some of the applicable goals and policies of the General Plan.</i></p>	<p>Consistency with General Plan</p> <p>MM 5.1-2: Grading within on-site slope areas that exceed 20 percent should be avoided in accordance with <i>General Plan</i> Policy CDD3A unless otherwise approved through Planning Commission Interpretation Policy 2001-3. The Final Subdivision Map shall be revised to redesign or eliminate those parcels that fail to meet the objectives of <i>General Plan</i> Policy CDD3A as determined by the approving body for the proposed Project.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.1-3: The Project proposes to change the current zoning designation, thereby adding the planned development overlay district to the site.</i></p>	<p>Consistency with Zoning Ordinance</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.1-4: The proposed Project, combined with other future development, would not increase the intensity of land uses in the area.</i></p>	<p>Cumulative Impacts</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p>5.2 PUBLIC HEALTH AND SAFETY</p>	<p>Short-Term Impacts (Construction)</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.2-1: Project construction activities would not create a significant hazard to the public through foreseeable upset and accidental conditions.</i></p>	<p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.2-2: The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</i></p>	<p>Emergency Response / Evacuation Plan</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.2-3: 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.</i></p>	<p>Wildland Fire Threat</p> <p>MM 5.2-3a: A Vegetation Management/Fire Fuel Reduction Plan (Plan) shall be submitted for approval by the Fire Marshal and Development Services Department in conjunction with Project improvement plans. The objectives of the Plan shall be to reduce fire-fuel loads to establish a adequate fire-safety buffer between proposed residences and adjacent wildlands subject to the following criteria:</p> <ol style="list-style-type: none"> Two primary fuel-reduction areas shall be established as follows: <p>ZONE 1: This zone shall include the area on-site within 100 feet of a building site that abuts natural open space. Within Zone 1, 80 to 90 percent of the existing brush (manzanita, ceanothus, etc.) shall be removed. Trees shall be saved except where approved to support development otherwise. Trees shall be limbed up to 8 feet.</p> <p>ZONE 2: This zone shall include a 100-foot-wide band parallel and immediately adjacent to the Zone 1 clearance area where located on-site. Within Zone 2, vegetation shall be reduced so that 50 percent of brush is cleared and trees are limbed up to 8 feet. Where crown closure of existing vegetation is already 50 percent or less, only ground level fuels will be reduced. All fuel-reduction zones shall be measured on a horizontal plane.</p> <p>The depths of Zone 1 and/or Zone 2 may be modified by the Fire Marshal upon approval of a project-specific fire-behavior study demonstrating that a substantially similar level of protection may be provided through a combination of fuel-reduction zones and other means of mitigation.</p> 	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>2. Heavy motorized equipment which could promote erosions shall not be used to reduce vegetation in areas with slope that are steeper than 20 percent or where located within 100 feet of a creek. Hand clearing or use of equipment with rubber tires is preferred. Other types of equipment may be used only if authorized by the Fire Marshal, Development Services Department, and Regional Water Quality Control Board pursuant to an approved erosion control plan.</p> <p>3. All required fuel-reduction work shall be completed by the Project Applicant prior to issuance of a building permit. Ongoing maintenance of the fire-fuel management zones shall be the responsibility of either the landscape maintenance district or the homeowners' association.</p> <p>MM 5.2-3b: Building construction which abuts the open vegetation areas, open space easements or dedications, including accessory buildings, shall meet the following minimum construction requirements:</p> <ol style="list-style-type: none"> 1. All homes shall be provided with residential sprinkler systems. 2. Roof material on all buildings shall be of a Class "A" rating. For roof coverings where the profile allows a space between the roof covering and sheathing, the space at the eaves end must be fire-stopped to keep out flames or embers (i.e. arch-tile roofs). 3. Wood fences, excluding posts shall be prohibited adjacent to open space areas. A fence may be provided but it must be of a noncombustible material. Additionally, the first ten feet perpendicular from the noncombustible fencing adjacent to open space shall also be noncombustible. 	



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>4. Any projections for the structure, including but not limited to, balconies and patio covers shall be enclosed on the sides and/or undersides with materials approved for one-hour, fire-resistive construction on the exterior side, to prevent heat or exterior fires from being trapped underneath the projection.</p> <p>5. Materials for balconies, patio covers and decks must be construction of noncombustible material as approved by the Fire Marshal.</p> <p>6. Structures constructed in such a manner that they are suspended on piers or pilings over hillsides, shall be of noncombustible construction, fire-retardant-treated wood or heavy timber, or enclosed on the sides with materials approved for one-hour, fire-resistive construction on the exterior side in such a manner as to prevent the underside of the structure from being subject to heat or flame from the hillside below.</p> <p>7. Venting shall not be located on the downhill side of the structure when the California Building Code venting regulations can be met without installation of downhill venting. When attic and underfloor vents are necessary on the buildings, they shall be louvered and screened with 1/4-inch metal mesh screen to prevent entry of sparks or burning ember. Turbine attic vents shall be equipped to allow one-way direction only; they shall not free-spin in both directions.</p> <p>8. Siding shall be of a noncombustible material and the eaves shall be protected with material approved for one-hour, fire-resistive construction on the exterior side.</p> <p>9. Exterior windows, window walls, glazed doors, and glazed opening with exterior doors shall be insulated glass units with a minimum of one tempered pane, either in or out, or glass blocks or have a fire-resistive rating of not less than</p>	



**TABLE 2-1 (Continued)
 Impacts and Proposed Mitigation Measures**

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>20 minutes or other assemblies as approved by the City of Redding Building Division and Fire Department. Glazing frames made of vinyl materials shall have a welded corner and metal reinforced in the interlock area and display ANSI/AAMA/NWWD.</p> <p>10. Skylights shall be tempered glass or dual-pane.</p> <p>11. Gutters shall be constructed with noncombustible material and include measures to prevent the collection of leaves and debris in the gutter.</p> <p>12. Prior to any vertical construction, a 20-foot-wide all-weather-surface road shall be constructed and remain serviceable to all developing lots and fire hydrants shall be installed with adequate fire flows available for fire-suppression purposes.</p> <p>MM 5.2-3c: Prior to occupancy of residential lots, vegetation clearance around structures shall meet the minimum requirement of the RMC Title 9 §9.20.160 and <i>General Plan</i> Policy HS4E. The following disclosure statement shall be provided as part of the transfer of property title:</p> <ol style="list-style-type: none"> 1. The owner acknowledges that said property is located within a very high wildland-fire hazard zone. 2. The owner acknowledges the provisions of RMC Title 9 §9.20.160 requiring proper maintenance of firebreaks around occupied structures, including all required structure maintenance requirements. <p>MM 5.2-3d: Throughout the duration of on-site construction activities, the following tasks shall be performed:</p> <ol style="list-style-type: none"> 1. A 30-foot fuel modification zone, from the curb line, shall be provided along both sides of all roads and driveways or functional equivalent. 	



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	2. All flammable vegetation and fuels caused by site development shall be legally disposed of or removed prior to fire season. 3. Project Applicant shall prepare a fire protection plan that will provide temporary emergency access and fuel modification zones for phased development during construction. 4. Any grass or other vegetation planted along cut/fill areas (i.e., roadways for erosion control purposes) shall be low growing (less than 18 inches in height) and approved by the Fire Marshal.	
<i>Impact 5.2-4: Project implementation would not create a significant hazard to the public or the environment through the long-term use of hazardous substances for the purpose of long-term maintenance.</i>	Long-Term Maintenance and Operation No mitigation measures are required.	Less than significant impact.
<i>Impact 5.2-5: The proposed Project, in combination with other cumulative projects, would not increase exposure to the public of hazardous substances.</i>	Cumulative Impacts No mitigation measures are required.	Less than significant impact.
5.3 AESTHETICS, LIGHT & GLARE <i>Impact 5.3-1: Grading and construction of individual phases would temporarily alter the visual appearance of the proposed Project area.</i>	Short-Term Impacts (Construction) No mitigation measures are required.	Less than significant impact.
<i>Impact 5.3-2: Project implementation would not permanently alter views of and across the Project site.</i>	Long-Term Character / Quality Impacts No mitigation measures are required.	Less than significant impact.
<i>Impact 5.3-3: Project implementation would permanently alter views to adjacent prominent ridgetops.</i>	Long-Term Impacts to Scenic Vistas No mitigation measures are required.	Less than significant impact.



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.3-4: The proposed Project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a designated scenic highway.</i></p>	<p>Degrade Scenic Resources from a Designated Scenic Highway No mitigation measures are required.</p>	<p>No impact.</p>
<p><i>Impact 5.3-5: The proposed Project would generate additional light and glare beyond existing conditions.</i></p>	<p>Light and Glare Impacts MM 5.3-5: The City shall ensure that a photometric plan for exterior park lighting does not spill over the property line. All exterior light fixtures at the park shall be shielded or directed away from adjoining uses to prevent light spill and glare, pursuant to all applicable lighting standards and requirements of the RMC.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.3-6: Project development, together with cumulative projects, may result in significant long-term cumulative aesthetic, light and glare impacts.</i></p>	<p>Cumulative Impacts Refer to MM 5.3-5.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p>5.4 TRAFFIC AND CIRCULATION <i>Impact 5.4-1: Local traffic delays could be experienced throughout the duration of Project construction.</i></p>	<p>Short-Term Impacts (Construction) No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.4-2: Development of the proposed Project could cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., results in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).</i></p>	<p>Year 2015 Plus Project Traffic Operations MM 5.4-2a: Eureka Way (SR-299)/Sunset Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 23rd residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Eureka Way (SR-299)/Sunset Drive intersection. MM 5.4-2b: Buenaventura Boulevard/Lakeside Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 24th residential unit, the Project Applicant shall construct a traffic signal and</p>	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>necessary appurtenant improvements at the Buenaventura Boulevard/Lakeside Drive intersection.</p> <p>MM 5.4-2c: Court Street/11th Street. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 86th residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Court Street/11th Street intersection.</p> <p>MM 5.4-2d: Placer Street/Airpark Drive/Fig Avenue. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 266th residential unit, the following improvements shall be made at the Placer Street/Airpark Drive/Fig Avenue intersection:</p> <ul style="list-style-type: none"> • Re-stripe westbound Placer Street to include one left-turn lane, one through lane, and one shared through/right-turn lane. • Widen eastbound Placer Street to include one left-turn lane, two through lanes, and one exclusive right-turn lane. • Modify the existing traffic signal as necessary to accommodate these improvements. 	
<p><i>Impact 5.4-3: Implementation of the proposed Project could generate pedestrian, bicycle, and transit trips, which would use the existing and planned circulation network in the Project area.</i></p>	<p>Pedestrians, Bicycles, and Transit</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.4-4: Implementation of the proposed Project could result in inadequate emergency access.</i></p>	<p>Emergency Access</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.4-5: Implementation of the proposed Project could substantially increase hazards due to a design feature (e.g., sharp curves or intersection sight lines) or incompatible uses (e.g., farm equipment).</i></p>	<p>Design or Incompatible Uses No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.4-6: Development of the proposed Project could result in increased traffic volumes at study area intersections under year 2030 cumulative plus project conditions.</i></p>	<p>Cumulative Conditions (Year 2030) MM 5.4-6a: Eureka Way (SR-299)/Road B. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 259th residential unit, the Project Applicant shall construct one of the following alternatives to accommodate traffic movements at the Eureka Way (SR-299)/Road B intersection:</p> <ul style="list-style-type: none"> • A traffic signal and necessary appurtenant improvements, or • Improvements to restrict movements to right-in/right-out and left-in only. <p>MM 5.4-6b: Eureka Way (SR-299)/Lower Springs Road. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 295th residential unit, the Project Applicant shall construct the following improvements at the Eureka Way (SR-299)/Lower Springs Road intersection:</p> <ul style="list-style-type: none"> • A traffic signal, widening of the eastbound approach to add a dedicated left-turn lane and necessary appurtenant improvements, or • If the Eureka Way (SR-299)/Road B intersection is improved to restrict movements to right-in/right-out and left-in only, the southbound approach (Road A) shall be widened to accommodate 1 left-turn lane, 1 shared left-turn/through lane, and 1 right-turn lane; eastbound Eureka Way (SR-299) shall be widened to accommodate 2 receiving lanes from the left-turn lanes exiting the Project; 	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p>5.5 NOISE</p> <p><i>Impact 5.5-1: Grading and construction within the Project area would result in temporary noise impacts on nearby sensitive receptors.</i></p> <p><i>Impact 5.5-2: Project implementation would generate additional vehicular travel on the surrounding roadway network, thereby resulting in permanent noise level</i></p>	<p>and the second receiving lane shall be tapered and terminated approximately 1,620 feet of the intersection.</p> <p>MM 5.4-6c: Eureka Way (SR-299)/Buena Ventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartment units which cumulatively would allow the 377th residential unit, the Project Applicant shall improve Eureka Way (SR-299)/Buena Ventura Boulevard intersection by widening the southbound approach to include an exclusive left-turn lane, a shared through/left-turn lane and an exclusive right-turn lane. The existing traffic signal shall be modified as necessary to accommodate these improvements.</p> <p>MM 5.4-6d: Placer Street/Buena Ventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartments which would cumulatively allow the 377th residential unit, the Project Applicant shall pay the pro-rata cost share representing 18 percent of the cost of improvements to Buena Ventura Boulevard at its intersection with Placer Street as identified in the Project Traffic Impact Analysis Report (Omni-Means, June 2009). The fee shall be established based on an engineer's cost estimate of the improvements prepared by the Project Applicant and approved by the City Engineer. Alternatively, should the subject Buena Ventura Boulevard improvements be added to the Citywide Traffic Improvement Fee (TIF) program, from that point forward payment of the TIF in accordance with the Redding Municipal Code will be deemed sufficient mitigation.</p> <p>Short-Term Impacts (Construction) No mitigation measures are required.</p> <p>Off-Site Mobile Source Impacts MM 5.5-2: In accordance with RMC §17.38.100, the proposed</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.5-2: Project implementation would generate additional vehicular travel on the surrounding roadway network, thereby resulting in permanent noise level</i></p>	<p>MM 5.5-2: In accordance with RMC §17.38.100, the proposed</p>	<p>Less than significant with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p>increases.</p>	<p>Project shall construct a minimum six-foot high perimeter block wall beginning at the site's western limits along Eureka Way (SR-299) extending easterly along the site's boundary to lot 37. At lot 37 the perimeter block wall shall extend along the rear residential property lines (lots 37 through 44) to Road A and shall have a return along Road A of approximately 30 feet. The perimeter block wall must block the line of sight at ground level from the dwelling units facing Eureka Way (SR-299). Acceptable materials for the construction of the barrier shall have a density of 3.5 pounds per square foot of surface area and be constructed of masonry materials. The exterior finish of the wall shall be determined in consultation with the City's Development Services Department. The final configuration and height of the barrier shall be confirmed by a qualified acoustical professional prior to the issuance of occupancy permit, in consultation with the City's Development Services Department.</p>	
<p>Impact 5.5-3: Implementation of the proposed Project would result in the generation of on-site noise associated with future residential units as well as mechanical equipment and landscape maintenance.</p>	<p>Stationary Source Impacts No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p>Impact 5.5-4: The proposed Project, in conjunction with cumulative growth would increase the ambient noise level in the project vicinity.</p>	<p>Cumulative Impacts No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p>5.6 AIR QUALITY Impact 5.6-1: Temporary construction-related dust and vehicle emissions would occur during construction within the Project area.</p>	<p>Short-Term Impacts (Construction) MM 5.6-1a: The proposed developer and all successors in interest shall include in all construction contracts the requirement that the following construction dust mitigation measures be implemented during all phases of construction:</p> <ul style="list-style-type: none"> • Apply nontoxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for ten days or more). • Reestablish ground cover on the construction site through seeding and watering prior to final occupancy. 	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<ul style="list-style-type: none"> • All grading operations of a project shall be suspended when wind (as instantaneous gusts) exceeds 20 miles per hour as directed by the Air Quality Management District. • Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person). • Schedule construction activities that affect traffic flow to off-peak hours. • Water active construction sites at least twice daily. • All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. (This provision is also enforced by local law enforcement agencies). • Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water). • Install wheel washers where vehicles enter and exit unpaved roads only paved roads, or wash off trucks and any equipment leaving the site each trip. • Cleared vegetation shall be treated by legal means other than open burning, such as chipping, shredding, or grinding. <p>MM 5.6-1b: The Project Applicant shall provide a plan for approval by the Shasta County Air Quality Management District and the City demonstrating that heavy-duty (>50 horsepower) off-road construction vehicles, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average reduction of 20 percent for NO_x and a 45 percent reduction of particulates compared to the most recent California Air Resources Board fleet average at time of construction.</p>	



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>MM 5.6-1c: The Project Applicant shall include in all construction contracts the requirement that the following temporary construction mitigation measures be implemented during all phases of construction:</p> <ul style="list-style-type: none"> • The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained. • Equipment operators will be instructed to minimize equipment idling time to 10 minutes. • Utilize existing power sources (e.g., power poles) to clean fuel generators rather than temporary power generators wherever possible. 	Less than significant impact.
<p>Impact 5.6-2: The proposed Project would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions and indirect impacts from electricity and natural gas consumption.</p>	<p>Long-Term Impacts (Operational)</p> <p>No mitigation measures are required beyond implementation of the Standard Mitigation Measures (SMMs) and "Level A" BMMs identified in the Air Quality Element of the General Plan.</p>	Less than significant impact.
<p>Impact 5.6-3: Carbon monoxide hot spots would not occur as a result of the proposed Project.</p>	<p>Carbon Monoxide Hot Spots Impacts</p> <p>No mitigation measures are required.</p>	Less than significant impact.
<p>Impact 5.6-4: The proposed Project would be consistent with the Air Quality Attainment Plan (AQAP) criteria.</p>	<p>Air Quality Conformity Analysis</p> <p>No mitigation measures are required.</p>	Less than significant impact.
<p>Impact 5.6-5: Impacts on regional air quality resulting from the proposed Project and cumulative projects may impact existing regional air quality levels on a cumulative basis.</p>	<p>Cumulative Impacts</p> <p>No mitigation measures are required.</p>	Less than significant impact.



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p>5.7 BIOLOGICAL RESOURCES</p> <p><i>Impact 5.7-1: Implementation of the proposed Project may adversely impact special-status biological resources.</i></p>	<p>Special-Status Fish Species Habitat</p> <p>MM 5.7-1a: Prior to issuance of a City grading permit effecting any jurisdictional waters as identified in the Project wetland delineation, the developer shall file a pre-construction notification with the Corps and secure any necessary Corps permit resulting from said consultation. As determined necessary by the Corps, formal consultation with NMFS may be initiated under Section 7 of the ESA. If NMFS concurs that the proposed Project will not affect listed salmonid species, no further measures are required with regards to protection against direct "take". If NMFS will not concur with a "no effect" or "not likely to adversely effect" determination, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. No activities shall occur within 100 feet of Gold Run Creek until Incidental Take authorization has been obtained from NMFS. 2. To the maximum extent practicable, in-channel construction shall be restricted to the dry season as stipulated by the lead regulatory agency (i.e., NMFS, CDFG) when stream flows have subsided and Steelhead and salmon are not present. 3. Additional measures to avoid direct impacts, beyond restriction of instream activities in Gold Run Creek, may include, but not be limited to, the following: <ul style="list-style-type: none"> • Retain a qualified biologist to conduct a pre-construction survey to determine if Steelhead or salmon are present in or within the vicinity of any proposed instream activity. If none are present, construction shall proceed pursuant to any conditions required by NMFS and/or CDFG in accordance with the FESA and CESA. 	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>For any features determined to not be subject to Corps jurisdiction during the verification process, authorization to discharge (or a waiver from regulation) shall be obtained from the RWQCB. For fill requiring a Corps permit, a Section 401 water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Loss of wetlands and/or jurisdictional waters shall be compensated at a minimum 1:1 ratio or at a rate determined by the lead regulatory agency. This can be accomplished through purchase of appropriate credits at an approved mitigation bank, appropriate payment into an approved in-lieu fee fund, or on-site or off-site creation, monitoring, and maintenance (as approved by the Corps, NMFS, CDFG, and RWQCB).</p> <p>MM 5.7-1b: Implement MM 5.11-1b in Section 5.11, HYDROLOGY AND WATER QUALITY.</p> <p>Special-Status Birds, Raptor Species, and Migratory Birds</p> <p>MM 5.7-1c: Prior to grading permit issuance or vegetation disturbance (between April 1st and July 31st), in areas where suitable nesting habitat exists for raptors, yellow warbler, yellow-breasted chat, and other migratory birds, a qualified biologist shall complete a bird nest search (pre-construction survey) of all suitable habitats to support a nest, and of the fields where there is a potential for ground nesting. The survey should be conducted no more than 30 days from the onset of construction. If an active nest is found within 500 feet of a construction area, the Project Applicant shall consult with a qualified biologist to determine appropriate measures to avoid disturbance of the nest(s) during any activities with the potential to disturb active nest(s) (i.e. a no-impact buffer delineated around the nest while the nest is active). Measures to be taken shall be reviewed by the CDFG and the City of Redding prior to initiation of any activities with the potential to disturb active nest(s).</p>	



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>Special-Status / Rare Plant Species</p> <p>MM 5.7-1d: Prior to the initiation of on-site grading and throughout the duration of Project construction activities a 100-foot buffer surrounding the elderberry shrubs shall be established. The buffer shall be fenced with temporary fencing and flagging in accordance with the USFWS protocol.</p> <p>MM 5.7-1e: Prior to the initiation of on-site grading, a special-status plant survey shall be conducted on-site by a qualified botanist during the appropriate survey period for the following special status plant species: pink creamsacs (<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i>) between April and June; northern clarkia (<i>Clarkia borealis</i> ssp. <i>borealis</i>) between June and September. In the event that special status plant species are identified, a relocation/transplantation program shall be established and approved by the CDFG prior to commencement of construction activities.</p> <p>Northwestern Pond Turtle</p> <p>MM 5.7-1f: Within 48 hours prior to any disturbance within suitable habitat for northwestern pond turtle, proposed disturbance areas shall be surveyed for the presence of this species by a qualified biologist. Surveys of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If the species is detected, individuals shall be relocated to a suitable site within the same drainage by a qualified biologist. If the species was detected during the pre-construction survey, a monitoring biologist will be onsite during initiation of construction activities to ensure that no turtles are present during the onset of disturbance activities. If a northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any trapped, injured, or killed northwestern pond turtles shall be reported immediately to the CDFG.</p>	



**TABLE 2-1 (Continued)
 Impacts and Proposed Mitigation Measures**

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<p>California Red-Legged Frog and Foothill Yellow-Legged Frog</p> <p>MM 5.7-1g: Two weeks prior to any disturbance within suitable habitat for the California red-legged frog and Foothill yellow-legged frog, proposed disturbance areas shall be surveyed for adults frogs, tadpoles, or eggs by a qualified biologist. If either species is detected, the biologist shall contact the USFWS (for the California red-legged frog) and CDFG (for the Foothill yellow-legged frog) to determine if moving any of the life stages is appropriate. In making this determination, the USFWS and CDFG would consider if an appropriate relocation site exists. If the USFWS and/or CDFG approves moving the animals, the biologist shall be allowed sufficient time to move the animals from the work site before work activities begin.</p> <p>Fire Fuel Reduction Plan</p> <p>MM 5.7-1h: Project grading and/or clearing plan shall incorporate the following to ensure the protection of sensitive species and/or habitats as a result of implementation of the Fire Fuels Reduction Plan.</p> <ol style="list-style-type: none"> Selective removal within 50 feet from the riparian edge or 100 feet from top of bank of Salt Creek and Gold Run Creek, whichever is greater, for fire protection, all vegetation trimming and removal shall be performed by using hand tools to prevent additional damage to riparian vegetation and soil compaction from the use of heavy equipment or vehicles. All slash materials (limbs, branches and other woody debris) resulting from trimming and removal activities should be removed from the buffer area by hand and properly disposed at an appropriate off-site location or retained for on-site erosion control in an appropriate manner. 	



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	2. Selective removal within 25 feet of the flow line of other jurisdictional features tributary to Salt Creek and Gold Run Creek shall be performed by hand. 3. Implement MM 5.7-1d and MM 5.7-1e.	
<i>Impact 5.7-2: Project implementation may adversely affect jurisdictional waters and associated riparian habitat.</i>	Jurisdictional Waters and Riparian Habitat MM 5.7-2: Implement MM 5.7-1a.	Less than significant impact with mitigation incorporated.
<i>Impact 5.7-3: Development of the proposed Project would not interfere with movement corridors for fish or wildlife species.</i>	Fish and Wildlife Corridors No mitigation measures are required.	Less than significant impact.
<i>Impact 5.7-4: Cumulative development (including the proposed Project) in the area would not adversely affect the area's biological resources.</i>	Cumulative Impacts Refer to MM 5.7-1 through MM 5.7-2.	Less than significant impact with mitigation incorporated.
5.8 CULTURAL RESOURCES <i>Impact 5.8-1: Implementation of the proposed Project may cause a significant impact to historic or prehistoric resources.</i>	Historic / Prehistoric Resources MM 5.8-1a: Should any previously unevaluated cultural resources (i.e., burnt animal bone, midden soils, Projectile points or other humanly-modified lithics, historic artifacts, etc.) be encountered, all earth-disturbing work shall cease within 50 feet of the find until a qualified archaeologist can make an assessment of the discovery and recommend/implement mitigation measures as necessary. This stipulation does not apply to those cultural resources evaluated and determined not Historical Resources/Historic Properties. MM 5.8-1b: If human remains are discovered during development of the proposed Project, all activity shall cease immediately, the Contractor shall notify the Shasta County Coroner's Office immediately under state law, and a qualified archaeologist and Native American monitor shall be contacted. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission shall be	Less than significant impact with mitigation incorporated.



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	contacted pursuant to Public Resources Code §5097.98.	
<i>Impact 5.8-2: Implementation of the proposed Project could result in the potential damage or destruction of undiscovered paleontological resources.</i>	Paleontological Resources No mitigation measures are required.	Less than significant impact.
<i>Impact 5.8-3: Implementation of the proposed Project, along with any foreseeable development in the Project vicinity, would not result in cumulative impacts to cultural resources.</i>	Cumulative Impacts No mitigation measures are required.	Less than significant impact.
5.9 PUBLIC SERVICES AND UTILITIES	Fire Protection	Less than significant impact with mitigation incorporated.
<i>Impact 5.9-1: Implementation of the proposed Project would result in the need for additional fire facilities or personnel.</i>	Refer to MM 5.2-3a through MM 5.2-3d in Section 5.2, PUBLIC HEALTH AND SAFETY.	
<i>Impact 5.9-2: Implementation of the proposed Project would increase the population within the City of Redding and require additional law enforcement services.</i>	Police Protection No mitigation measures are required.	Less than significant impact.
<i>Impact 5.9-3: Implementation of the proposed Project would increase student enrollment at the Shasta Union Elementary School District, the Shasta Union High School District, and the Redding School District schools.</i>	School Facilities No mitigation measures are required.	Less than significant impact.
<i>Impact 5.9-4: Development of the Project site would create additional demand on parks and recreation facilities.</i>	Parks and Recreation No mitigation measures are required.	Less than significant impact.
<i>Impact 5.9-5: Implementation of the proposed Project would require the expansion of existing bus routes and the construction of bus stop facilities within the proposed Project area.</i>	Public Transportation No mitigation measures are required.	Less than significant impact.



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.9-6: Development associated with the proposed Project would potentially increase water demand.</i></p>	<p>Water Supply and Demand No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-7: The proposed Project may result in the need for increased fire flow capacity and/or storage.</i></p>	<p>Fire Flow Capacity / Storage MM 5.9-7: Prior to issuance of building permits for any of the two-story apartments within the Project, one of the following two facilities shall be in place and operational to meet City and California Fire Code fire flow requirements to the satisfaction of the City Engineer: 1. An on-site pressure booster pump meeting the design specifications of the City. Funding for maintenance of the booster pump station shall be provided through creation of a utility maintenance district encompassing the Project. 2. A new 750,000 gallon storage reservoir in the Hill 900 pressure zone through City administration of the City's 2000 <i>Water Master Plan</i> and Capital Improvement Program.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.9-8: The proposed Project may potentially reduce water pressure in the distribution system.</i></p>	<p>Water Pressure No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-9: Implementation of the proposed Project would result in the increased demand and expansion of sewer services.</i></p>	<p>Sewer Services MM 5.9-9a: During the course of phased Project development, off-site improvements to the City wastewater collection system shall be made in accordance with the City's 2003 <i>Wastewater Utility Master Plan</i> and Capital Improvement Program, generally as follows: 1. Phase 1 - Upsize "Jenny Creek" line downstream of manholes K3-11 and K3-15. 2. Phase 2 - Upsize "Trinity Street" line downstream of manholes J6-41, J6-28, and J6-32.</p>	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.9-10: Implementation of the proposed Project may result in increased demand for solid waste services.</i></p>	<p>3. Phase 3 - Construct Phase II, Parts 1 and 2, of the Westside Interceptor.</p> <p>MM 5.9-9b: Wastewater collection improvements shall be constructed in accordance with City standards and the specifications of the City Engineer. Funding for maintenance of the private sewer pump stations shall be provided through creation of a utility maintenance district encompassing the Project.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-11: Implementation of the proposed Project would increase demand for electric service and require the extension of existing infrastructure.</i></p>	<p>Solid Waste / Landfills</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-12: Implementation of the proposed Project would increase demand for natural gas and require the extension of existing infrastructure.</i></p>	<p>Electrical Services</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-13: Implementation of the proposed Project would require the extension of existing telephone service infrastructure.</i></p>	<p>Natural Gas</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-14: Implementation of the proposed Project may require the need for public road maintenance, and the need for new roads.</i></p>	<p>Telephone Services</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.9-15: Potential cumulative development would increase the demand for services and utilities. An increased demand for services may be expected for the Redding police department, fire department, local school districts, and other public services. Increased demand for utilities may be expected for electricity, natural gas, water, wastewater, and solid waste.</i></p>	<p>Roadway Maintenance</p> <p>No mitigation measures are required.</p> <p>Cumulative Impacts</p> <p>Refer to mitigation measures listed above.</p>	<p>Less than significant impact.</p> <p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p>5.10 GEOLOGIC RESOURCES</p> <p><i>Impact 5.10-1: Future development of the proposed Project site may result in substantial soil erosion.</i></p>	<p>Soil Stability</p> <p>MM 5.10-1a: In conjunction with project improvement plans, the Project Applicant shall submit a final grading plan and erosion- and sediment-control plan prepared by a licensed engineer to the City Engineer pursuant to RMC, Chapter 16.12, <i>Clearing, Grading, Fills and Excavations</i>. As required by the Code, the submittal shall include a soils report prepared by a qualified professional. The grading plan shall incorporate the measures addressing soil stability, landslides, and mine adits identified in the <i>Preliminary Soils Report</i> (August 2008), prepared by SHN Consulting Engineers and Geologists and any additional measures recommended by the final soils report.</p> <p>MM 5.10-1b: The control measures for cuts, fills, drainage, and erosion shall be designed and constructed per the final soils report and Standard Specifications for Public Works Construction (Green Book), latest edition, City Construction Standards, and the California Building Code.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.10-2: Implementation of the proposed Project would not expose people to adverse effects associated with rupture of a known earthquake fault, or cause strong ground shaking during a seismic event.</i></p>	<p>Fault Rupture / Seismic Ground Shaking</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.10-3: Future development associated with the proposed Project site would not cause liquefaction.</i></p>	<p>Liquefaction</p> <p>No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.10-4: Due to the existing terrain, implementation of the proposed Project may expose people to seismically induced landslides and slope instability.</i></p>	<p>Landslides</p> <p>MM 5.10-4: Subsurface exploration shall be performed by a licensed geotechnical engineer prior to making final geotechnical design recommendations. The final geotechnical design recommendations shall confirm or expand upon the following preliminary recommendations to the satisfaction of the City Engineer:</p>	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
	<ol style="list-style-type: none"> 1. All cut and fill slopes shall be designed and graded to be no steeper than two horizontal to one vertical (2H:1V). 2. The overall stability of the proposed grading shall be evaluated at critical cross sections as determined by a geotechnical engineer. The design parameters for the soil shall be determined based on subsurface exploration at the proposed retaining wall locations, and material testing of the fill materials. 	
<p><i>Impact 5.10-5: Implementation of the proposed Project would not expose people or structures to flooding as a result of the failure of a dam or levee.</i></p>	<p>Flooding No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.10-6: The proposed Project is not located on soil that has potential to be moderately expansive.</i></p>	<p>Expansive Soil No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.10-7: Implementation of the proposed Project may disturb previously discovered or undiscovered mine adits / tunnels.</i></p>	<p>Mine Adits / Tunnels MM 5.10-7a: The strike and dip of the mine tunnel at Adit J1 (Jefferson Mine) shall be verified through subsurface exploration during on-site geotechnical investigations required by MM 5.10-4. Recommendations to appropriately close Adit J1 shall be implemented prior to commencement of grading activities. MM 5.10-7b: Prior to recordation of the Final Subdivision Map, the Project Applicant shall retain a qualified geotechnical engineer to certify that all on site open mine entrances and other mine features have been properly closed to prevent entry. All mine features shall be properly filled and compacted to prevent any physical hazard to person or property. Should additional adits be discovered during site clearing, a qualified geologist shall be contacted to evaluate the site conditions surrounding the adit, and provide additional evaluations of risk of adverse effects to the proposed Project.</p>	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.10-8: The proposed Project, combined with future development, would not result in increased short-term impacts such as erosion and sedimentation, and long-term seismic impacts within the area.</i></p>	<p>Cumulative Impacts Mitigation is incorporated on a project-by-project basis to reduce impacts to a less than significant level.</p>	<p>Less than significant impact.</p>
<p>5.11 HYDROLOGY AND WATER QUALITY <i>Impact 5.11-1: Grading, excavation, and construction activities associated with development of the proposed Project may impact surface water quality. Soil disturbance associated with construction activities may cause accelerated soil erosion and sedimentation and/or the release of pollutants to adjacent creeks.</i></p>	<p>Short-Term Impacts (Construction) MM 5.11-1a: The Project Applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and secure a Construction Activity Storm Water Permit from the Regional Water Quality Control Board (RWQCB). MM 5.11-1b: Prior to the beginning of any clearing, grading, or site improvement activities, with the exception of fuel management activities, improvement plans for grading, drainage, utilities, and other required improvements shall be approved by the Engineering Department and other concerned City of Redding departments. These plans shall be in conformance with the SWPPP and RMC Title 16.12. Prior to the issuance of a clearing and/or grading permit, an Interim Erosion and Sediment Control Plan shall be included that establishes specific measures and Best Management Practices (BMPs) tailored to the Project to maximize the reduction of pollutant loading in stormwater runoff and shall be implemented to the maximum extent practicable. Grading shall be restricted to the period from April 15th to October 1st of any year unless a waiver is granted by the City Engineer.</p>	<p>Less than significant impact with mitigation incorporated.</p>
<p><i>Impact 5.11-2: Implementation of the proposed Project may result in long-term impacts to water quality.</i></p>	<p>Water Quality Impacts MM 5.11-2: All storm drain facilities shall be designed to be consistent in design and intent with the City of Redding Construction Standards, the City of Redding Storm Water Quality Improvement Plan, and the City of Redding Phase II NPDES Permit from the California Regional Water Quality Control Board. Project design shall incorporate strategies to minimize the polluting of storm water both during construction</p>	<p>Less than significant impact with mitigation incorporated.</p>



TABLE 2-1 (Continued)
Impacts and Proposed Mitigation Measures

Impact Statement	Mitigation Measure	Resulting Level of Significance
<p><i>Impact 5.11-3: Development of the proposed Project would increase storm water runoff rates generated by the proposed Project site when compared to existing conditions.</i></p>	<p>and long-term. Storm Water Runoff No mitigation measures are required.</p>	<p>Less than significant impact.</p>
<p><i>Impact 5.11-4: The proposed Project, in combination with other cumulative projects, would not result in increased degradation of surface and groundwater quality in the area.</i></p>	<p>Cumulative Impacts Refer to MM 5.11-1 through 5.11-2.</p>	<p>Successful implementation of mitigation measures identified for this Project, combined with adherence with applicable City of Redding design and development standards related to water quality on a project-by-project basis, would serve to reduce potential cumulative water quality impacts to less than significant levels.</p>



2.3 SUMMARY OF PROJECT ALTERNATIVES

In accordance with State *CEQA Guidelines* §15126.6, Section 7.0, ALTERNATIVES TO THE PROPOSED PROJECT, describes a range of reasonable alternatives to the proposed Project that could feasibly attain the basic objectives of the proposed Project and evaluates the comparative merits of each Alternative. The analysis focuses on Alternatives capable of eliminating significant adverse environmental effects or reducing them to less than significant levels, even if these Alternatives would impede, to some degree, the attainment of the Project objectives. Potential environmental impacts are compared to impacts from the proposed Project. The following is a description of each of the Alternatives evaluated in Section 7.0.

“NO PROJECT/NO DEVELOPMENT” ALTERNATIVE

The “No Project/No Development” Alternative assumes the proposed Project would not be implemented and land uses and other proposed improvements would not be constructed. The existing Project site would remain unaltered and in its current condition. All infrastructure improvements including water, wastewater, drainage, and circulation facilities identified in the proposed Project would not be constructed. Because the Project site would remain unchanged, few or no environmental impacts would occur. This Alternative serves as the baseline against which to evaluate the effects of the proposed Project and other Project Alternatives.

This Alternative would reduce impacts compared to the proposed Project in all environmental categories; however, the “No Project/No Development” Alternative does not meet the Project objective for construction of approximately 440 residential units at a variety of lot sizes and home sizes. This Alternative was rejected because it does not fulfill any of the objectives of the proposed Project.

“NO PROJECT/ DEVELOPMENT IN ACCORDANCE WITH EXISTING GENERAL PLAN/ZONING DESIGNATIONS” ALTERNATIVE (INCREASED DENSITY)

Under the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative, the Project site would be developed in densities allowed under the existing *General Plan* land use designation and zoning for the property. Implementation of this Alternative would consist of development on the approximate 272.9-acre site under the current land use designations of “Residential, 6 to 10 units per acre”, “Residential, 2 to 3.5 units per acre”, and “GWY” (Greenway). The “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would not include the rezone to apply the “PD” Planned Development Overlay District to the existing “RS-2” (Residential Single Family), “GO” (General Office), and “OS” (Open Space) designations.

Under this Alternative, approximately 119 acres (of the total 272.9 acres) of the site are suitable for development (development in areas with a slope of 20 percent or less). Of the 119 acres, 25 acres are zoned “RS-2” (Residential Single Family) and 94 acres are zoned “RM-9” (Residential Multiple Family). Under the “RS-2” (Residential Single Family) zoning designation (2 dwelling units per acre), the base density would allow 50 units, and the maximum density would allow 87 units (3.5 dwelling units per acre). Based on development standards, a realistic maximum buildout for the “RS-2” (Residential Single Family) zoning designation would be 62 units (or 2.5 dwelling units per acre). Under the “RM-9” (Residential Multiple Family) zoning designation (9 dwelling units per acre), the maximum density would allow 846 units. The “RM” (Residential Multiple Family) zoning district allows large apartment buildings; therefore, 846 dwelling



units would be allowed on the 94 acres. As such, the total possible unit yield within existing on-site zoning classifications (with no neighborhood park dedication) would be 908 units ($62 + 846 = 908$). Assuming a park dedication comparable to that identified for the proposed Project, a total residential unit yield under this Alternative would be 836 dwelling units. Approximately 153 (of 272.9) acres would remain as open space.

Although implementation of the "No Project/Development in Accordance with Existing General Plan and Zoning Designations" Alternative would be consistent with the existing *General Plan* land use designations and zoning for the Project site, not all of the stated Project objectives (as described in Section 7.1) would be satisfied. This Alternative would not significantly reduce impacts associated with the proposed Project. It would, in fact, result in similar impacts or increase the level of impacts to all environmental categories discussed above. Therefore, the "No Project/Development in Accordance with Existing General Plan and Zoning Designations" Alternative is environmentally inferior to the proposed Project.

"SITE PLAN ALTERNATIVE 1"

Under "Site Plan Alternative 1", development would occur based on the existing *General Plan* land use designations and zoning for the site. Land use designations would include the following two classifications: "Residential - 6 to 10 dwelling units per Acre" and "Residential, 2 to 3.5 units per acre". The "Residential - 6 to 10 dwelling units per acre" land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The "Residential, 2 to 3.5 units per acre" land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. This analysis assumes that 242 lots would be developed under the "Residential, 2 to 3.5 units per acre" designation, and 322 lots would be developed under the "Residential - 6 to 10 dwelling units per acre" designation, therefore resulting in the development of 564 dwelling units. In addition, a 25-acre neighborhood park would be provided, and approximately 148 (of 272.9) acres would remain as open space.

This Alternative would not reduce any impacts associated with the proposed Project. This Alternative would result in similar impacts in the categories of land use, public health and safety, cultural resources, public services and utilities, and would increase the level of impacts to aesthetics, air quality, biological resources, geologic resources, noise, traffic and circulation, and hydrology and water quality. Under this Alternative, 0.97 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). Under this Alternative, grading activities would require approximately 840,000 cubic yards of cut and 920,000 cubic yards of fill, resulting in approximately 80,000 cubic yards of import material, compared to the proposed Project, which would have a net zero balance of cut and fill. Therefore, "Site Plan Alternative 1" is inferior to the proposed Project and is thus rejected from further consideration.

"SITE PLAN ALTERNATIVE 2"

Under "Site Plan Alternative 2", development would occur the existing *General Plan* land use designations and zoning for the Project site. Land use designations would include the following two classifications: "Residential - 6 to 10 dwelling units per acre", and "Residential, 2 to 3.5 units per acre". The "Residential - 6 to 10 dwelling units per acre" land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The "Residential, 2 to 3.5 units per acre" land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. Under this Alternative, 519 detached single-family dwelling units (consisting of traditional lots and



garden-courts) would be constructed on approximately 112 acres. No neighborhood park would be provided, and there would be limited housing types. Approximately 160 (of 272.9) acres would remain as open space.

This Alternative would result in similar impacts or increase the level of impacts to all environmental categories discussed above. This Alternative would result in similar impacts in the categories of land use, public health and safety, cultural resources, and public services and utilities, and would increase the level of impacts to aesthetics, hydrology and water quality, geologic resources, traffic, noise, air quality, and biological resources. Under this Alternative, 1.40 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). Additionally, 500,000 cubic yards of dirt would be removed from the site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. Therefore, "Site Plan Alternative 2" is considered inferior to the proposed Project and is thus rejected form further consideration.

"SITE PLAN ALTERNATIVE 3" (REDUCED DENSITY)

Under "Site Plan Alternative 3", development would occur under the existing *General Plan* land use designations and zoning for the Project site. Land use designations would include the following two classifications: "Residential - 6 to 10 dwelling units per acre", and "Residential, 2 to 3.5 units per acre". The "Residential - 6 to 10 dwelling units per acre" land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The "Residential, 2 to 3.5 units per acre" land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. This analysis assumes that 347 detached single-family units would be constructed. No neighborhood park would be provided. Approximately 159 (of 272.9) acres would remain as open space.

The intent of this Alternative is to avoid or substantially reduce significant impacts associated with the proposed Project. With the construction of fewer homes on the property, impacts associated with land use, traffic, noise, air quality, cultural resources, public services and utilities, and hydrology and water quality would be reduced; however, mitigation measures similar to the proposed Project would be required. Under this Alternative, 0.83 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). In addition, 112,000 cubic yards of dirt would be removed from the site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. Impacts in the category of public health and safety would result in similar impacts when compared with the proposed Project. Impacts to aesthetics, biological resources, and geologic resources would be equal to or slightly worse than those of the proposed Project. This Alternative would only partially satisfy the proposed Project objectives, as there is only one housing type (not a mixture of housing types and densities) and no neighborhood park would be provided.

ALTERNATIVE ELIMINATED FROM FURTHER CONSIDERATION

The Alternative discussed below was identified but eliminated from further review based upon State *CEQA Guidelines* §15126.6(c), which states: "The EIR should also identify any alternatives that were considered . . . but rejected as infeasible during the scoping process 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."



“OFFSITE” ALTERNATIVE

This Alternative considers that the land uses planned for the proposed Project would be achieved elsewhere in the City, without development of the proposed Salt Creek Heights Subdivision site. These impacts may be of much greater magnitude because the “Offsite” Alternative would not necessarily be developed consistent with *General Plan* goals for development in the identified Project area, which is designated for residential development.

The City of Redding, through its *General Plan*, provides for the orderly and planned development of the City, permitting the City to meet its housing goals, enhancing the City’s employment base, allowing for the efficient provision of services, and protection of resources. The Project site is planned for development of residential uses in the *General Plan*. The impacts identified for this Project are primarily associated with aesthetics, light and glare, noise, air quality, and traffic. The land uses proposed for the Project would be placed elsewhere in the community, thus placing residential development in an area that could encourage growth inducement, sprawl, and the inefficient extension of urban services. In addition, the planned residential use of the site would remain even if this Project were to occur elsewhere. Relocation of the development to another location would transfer the traffic to that location, possibly where the *General Plan* Circulation Element did not anticipate the need to enhance the surrounding infrastructure, thus providing even greater traffic impacts. Furthermore, any development of the size and type proposed by the Applicant would have similar impacts on aesthetics, noise, air quality. Therefore, moving the Project land uses to another site could result in similar impacts and may not contribute to minimizing, reducing, or avoiding potentially significant impacts. Lastly, this Alternative would not meet the basic objectives of the Project. For all of these reasons, an “Offsite” Alternative was eliminated from further review.



SECTION 3.0: Project Description



3.0 PROJECT DESCRIPTION

The purpose of the Project Description section is to describe the proposed Project in a useful and comprehensible manner to the public, agencies, and decision-makers. State *CEQA Guidelines* §15124 requires a project description to contain: (1) a regional map showing the location of the Project and a detailed map showing the precise location and boundaries of the Project; (2) a statement of objectives sought by the Project, including the underlying purpose of the Project; (3) a general description of the Project's technical, economic, and environmental characteristics; and (4) a statement briefly describing the intended uses of the EIR, including a list of agencies that are expected to use the EIR in their decision-making, a list of permits and other approvals required to implement the Project, and a list of related environmental review and consultation requirements required by federal, state, and local laws, regulations or policies.

3.1 PROJECT LOCATION AND SETTING

3.1.1 REGIONAL SETTING

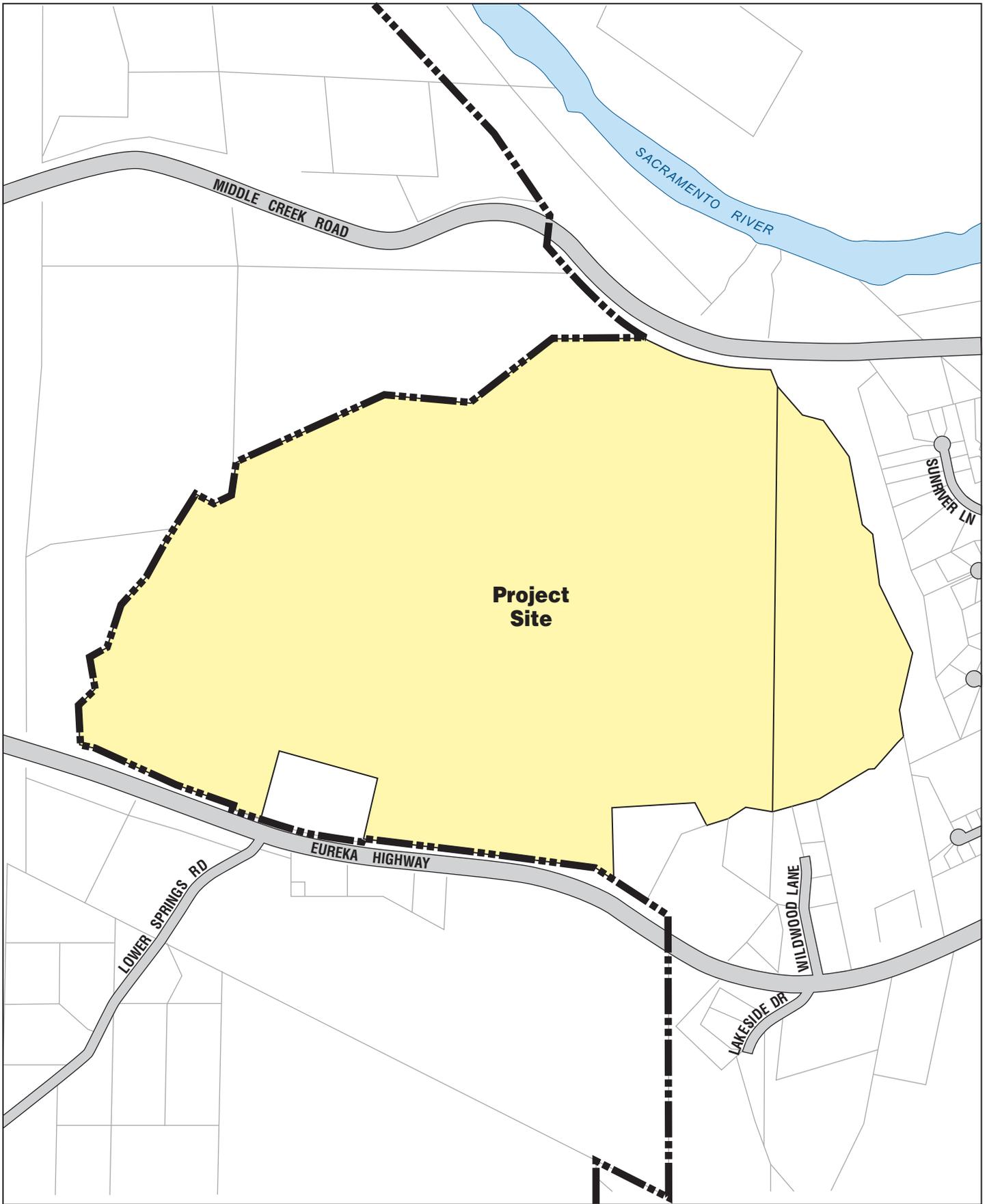
The City of Redding is located in central Shasta County in northern California, on the north end of the Central Valley. The City is situated approximately 155 miles north of the City of Sacramento and approximately 215 miles northeast of the City of San Francisco. The proposed Project is located at 4200 Eureka Way (APN's 204-030-036, -027, and -023), within the western portion of the City of Redding (Township 32 North, Range 5 West, within portions of Sections 32 and 33, Mount Diablo Base and Meridian) (refer to Figure 3-1, REGIONAL VICINITY).

3.1.2 PROJECT LOCATION

The Project site is located along the north side of Eureka Way (SR-299) at the western City limits, in the vicinity of Lower Springs Road. Salt Creek forms the western and northern boundaries of the proposed Project, and an unnamed tributary, referred to as Gold Run Creek, forms the eastern Project boundary (refer to Figure 3-2, LOCAL VICINITY MAP). The proposed Project is located within an area designated in the *City of Redding 2000 - 2020 General Plan* (herein referenced as *General Plan*) as "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", "General Office", and "Greenway" (GWY). The proposed Project site is zoned "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space).

3.1.3 EXISTING CONDITIONS ON-SITE

The approximate 272.9-acre Project site is currently undeveloped land that has been previously subject to mining activities. On-site topography varies from a nearly flat terrace at the center of the site, to moderately steep to very steep canyons. At the landscape level, the topography consists of incised canyons that slope to the northeast towards the Sacramento River. The hydrology of the proposed Project has been altered due to past mining activities. Numerous ephemeral drainages flow into the intermittent Salt Creek and Gold Run Creek channels that bound the proposed Project. Elevation within the proposed Project ranges from 520 feet above mean sea level (msl) to 740 feet above msl. Habitats occurring within and adjacent to the proposed Project include annual grassland, mixed chaparral, blue oak woodland, open water, riparian wetland, and seasonal wetland (refer to Figure 3-3, AERIAL PHOTOGRAPH). Current on-site uses are limited to electric utility corridors, with several utility maintenance roads crossing the proposed Project site. Eureka Way (SR-299) forms the southern boundary of the proposed Project.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Vicinity

Figure 3-2



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Aerial Photograph

Figure 3-3

Source: Sharrah Dunlap Sawyer, Inc., 4/1/09.



HISTORIC CONDITIONS

Historic land uses in the Project vicinity consisted primarily of gold mining activities, in addition to utility and transportation development. As a result of historic mining activities in the vicinity, ridge tops, hillsides, stream terraces, and stream beds have been widely altered, and the Project area's biological habitat was adversely affected by fumes associated with the Keswick and other copper smelters in the area during the 1890s to early 1900s.

3.1.4 SURROUNDING LAND USES

The surrounding land uses consist of low density residential areas, commercial, and natural open space (refer to Table 3-1, PROPOSED PROJECT SITE AND SURROUNDING LAND USES).

**TABLE 3-1
 Proposed Project Site and Surrounding Land Uses**

Direction	Land Use Designation ¹	Zoning ²	Existing Land Use
Proposed Project Site	6 to 10, 2 to 3.5, GO, GWY	RM-9, RS-2, GO, OS	Vacant
North	GWY	OS, RS-2.5	Vacant, Sacramento River
South	2 to 3.5, 1 to 5, GWY, PF-I,	PF, RS-2, RS-3	Vacant, Residential, Commercial
East	GWY, 2 to 3.5	RS-2	Residential
West	RA, OS*	R-R, U*	Rural Residential, Vacant

¹ Land Use Designations:
 6 to 10: Residential, 6 to 10 units per acre
 2 to 3.5: Residential, 2 to 3.5 units per acre
 1 to 5: Residential, 1 to 5 units per acre
 GWY: Greenway
 PF-I: Public Facility
 GO: General Office

² Zoning Designations:
 RM-9 (Residential Multiple Family)
 RS-2 (Residential Single Family)
 RS-2.5 (Residential Single Family)
 RS-3 (Residential Single Family)
 RA (Rural Residential)
 OS (Open Space District)
 GO (General Office)
 PF (Public Facility District)
 RR (Rural Residential)
 U (Unclassified)

*Shasta County General Plan Land Use and Zoning Designations
 Source: City of Redding, County of Shasta, 2008.

NORTH

Land to the north of the proposed Project is designated "Greenway" (GWY), and consists primarily of open space and the Sacramento River, including the Sacramento River Trail. Salt Creek forms the northwestern boundary of the site. Existing zoning districts north of the proposed Project consist of "OS" (Open Space) and "RS-2.5" (Residential Single Family).



EAST

Land to the east of the proposed Project consists of single-family residences and undeveloped land. Gold Run Creek forms the eastern boundary of the proposed Project. Single-family residential uses designated "Residential, 2 to 3.5 units per acre" and zoned "RS-2" (Residential Single Family) are located to the east of Gold Run Creek.

SOUTH

Land to the south of the proposed Project contain residences, the Old Millhouse Deli, an electric substation, and Eureka Way (SR-299). Undeveloped land and residences are located to the south of Eureka Way (SR-299). This land is designated "Residential, 2 to 3.5 units per acre", and "Residential 1 to 5 units per acre". A "Public Facility" land use designation is also located adjacent to the southern boundary of the proposed Project. Existing zoning districts consist of "PF" (Public Facility), "RS-2" (Residential Single Family), and "RS-3" (Residential Single Family).

WEST

Land to the west is primarily undeveloped, along with a few single-family residential units. Salt Creek forms the western boundary of the proposed Project. Land to the west of the proposed Project is not within the City of Redding's City limits; therefore, Shasta County land use and zoning designations apply. Existing Shasta County land use designations west of the proposed Project consist of "RA" (Rural Residential) and "OS" (Open Space). Existing Shasta County zoning for areas to the west consist of "R-R" (Rural Residential) and "U" (Unclassified).

3.2 BACKGROUND AND HISTORY

HISTORICAL OWNERSHIP

The proposed Project is located in the northwest corner of Pierson B. Reading's Mexican land grant, in Sections 1 and 2 as laid out in Magee's post-1868 survey of the Rancho Buenaventura. Land that was not sold in Reading's lifetime was sold after his death in 1868. In 1877, Edward Frisbie and James Haggin bought a large tract in the northern part of Reading's grant. Frisbie was a Redding land developer and banker, and Frisbie and other investors developed the original town of Redding on this part of the Rancho. Because the Reading grant was never in the public domain, no government patents were issued within its boundaries, and no mineral surveys were filed with the Government Land Office. Lots were sold to individual owners, often to speculators, and many Redding properties changed hands repeatedly as investors strove to capitalize on the rising real estate market.

By 1896, the western part of the proposed Project belonged to the Eureka Tellurium Consolidated Mining Group, also known as Telluride Consolidated. The Eureka Tellurium Group consisted of four mining claims along Salt Creek and the Sacramento River in Section 29, Township 32 North, Range 5 West. These were the Telluride, the Cleveland, the Shaefer, and the Herbert. Although these mining claims were located in the 1850s, the mining group achieved only a small production, around 1901. In 1894, according to the State Mineralogist's report for that year, the Telluride mine had a 10-stamp mill, 850 pounds of stamps, 8-foot apron plates, and two Woodbury concentrators. By 1896, the Telluride had five men working under the supervision of owner Peter J. Sherer *et al.* The percentage of gold in the ore was high, but proved difficult to extract. However, optimism prevailed and by this year the mining group had expanded its land holdings



to 292 acres, including the property in Sections 32 and 33 of the proposed Project. An aerial tramway, shown on the Weigel 1908 map, may have been built across Eureka Tellurium land about this time, although none of the available State Mineralogist's reports mention the tramway.

Nearby, the Minneshasta claim, south of the Shasta Wagon Road (now Eureka Way [SR-299]) in the SE $\frac{1}{4}$ of Section 32 and the SW $\frac{1}{4}$ of Section 33, was intermittently active from the 1890s to the 1920s. Also south of the road was the Gold Leaf Consolidated Group (also known as the Crown Deep, or the Miller). Southwest of the Gold Leaf Quartz Mine (mostly in Section 5, Township 31North, Range 5 West) was a cluster of undeveloped mining claims in the Monte Cristo Consolidated Mining Group and the Arizona Group. The existence of these numerous claims suggests that the area was expected to be profitable. The Gold Leaf aerial tramway linked the Gold Leaf and Minneshasta mines and ran northeast across the Eureka Tellurium Group's land. The tram may have been planned to serve the Arizona Group and the Monte Cristo Group as well.

It is possible that quartz rock was mined south of the proposed Project, carried by aerial tram to the railroad, and then sent farther upriver to use as flux in the copper smelters. Quartz ore was an important product of played-out quartz mines. At this time, the mines at Quartz Hill in the Buckeye Mining District were the primary source of the highly siliceous ore used for flux at the Keswick smelters in the first years of the twentieth century. Kett's comprehensive history of the Mountain Copper Company does not note the Eureka Tellurium Group as a source of flux for the smelters at Keswick. It is true, however, that individual miners also quarried suitable ore and brought it by wagon to the rail line, to be carried to the copper smelters, and the Keswick smelter probably accepted flux material from numerous sources.

The Eureka Tellurium Consolidated Group was bankrupt by 1905 and all its land in the proposed Project area was sold at Sheriff's auction. At this time, the Eureka Tellurium was in debt to Charles Shively and as the owners did not have funds to satisfy the debt, the "lands, tenements and real property" (a property of 290.37 acres) was sold for \$24,443.40. Charles Shively was the highest bidder. Shively was a young miner, age 25 at the time of the 1900 Federal Census, but little more information was found regarding Shively. Theast owner of record of the Eureka Tellurium was John J. Bartosh, et al., of Redding

After the Sheriff's sale, the Wiegel map of 1908 shows that the eastern half of the proposed Project was owned by "Von Balven." County records show that this was W. E. F. Van Balveren. Van Balveren deeded several parcels of land, including this one, to his wife, Elsie, in 1911. Wiegel's map for 1908 shows the western half of the proposed Project still in the possession of Eureka Tellurium, although according to the Sheriff's deed of 1905, the land had already been sold.

Nothing else was found in Shasta County Records or reference works regarding the principals of the mining claims discussed above. Only J. J. Bartosh was found in the 1926 *Redding Telephone Directory*, as the proprietor of a cigar store on Yuba Street. By the time County Surveyor Wiegel published his *Map of Shasta County* in 1912, Eureka Tellurium no longer owned any part of the proposed Project. Instead, ownership was split between three individuals. E. H. Johnson was the owner of the western portion. Information regarding E. H. Johnson was not found in available Shasta County Records, but further research would show when Johnson acquired this part of the project parcel. C. Ferrero had a smaller parcel on the east. Carlo Ferrero registered to vote in Shasta County in 1926, giving his occupation as farmer. Possibly he was living and farming on his property in Section 33. "Von Balven" is marked on the 1912 Wiegel map as owning the easternmost segment bounded on the east by Gold Run Creek, and the Van Balveren couple were the owners by 1908 as described above. Previously, the Van Balveren's lived in Buckeye as recorded in the Federal Census for 1900. By 1951, all of the proposed Project belonged to Antonio and Balbina Alvarez. Current owners of the proposed Project are listed as Cleve F. Beck and Elizabeth H. Beck, who purchased the property from the Alvarez's in 1977.



ENTITLEMENT HISTORY

In mid 1985, the City of Redding submitted an application to the County of Shasta and the Shasta County Local Agency Formation Commission (LAFCO) to annex approximately 756 acres, including to the proposed Project site, into the City of Redding (Annex #85-10 / Shasta County FPD #1 & CSA #15 Detachments). This action was approved by the Shasta County Board of Supervisors through adoption of Resolution No. 87-308 on December 8, 1987. Shasta County LAFCO subsequently approved the annexation and the associated reorganization on December 18, 1987.

The annexation included properties in the Shasta Community Services District (CSD), which is a water-providing agency. There was not, however, a formal detachment action taken; therefore, a few properties exist in both the Shasta CSD and the City of Redding water service boundary. To eliminate any potential confusion over the service provider for the Salt Creek Heights project, Sierra Pacific Industries (SPI) (referenced herein as the Project Applicant) requested a detachment from the Shasta CSD and expressed the intent to receive water service from the City of Redding. On September 21, 2006, the CSD Board tentatively agreed to the detachment, pending an interim service agreement with the City. On September 17, 2007, Sierra Pacific Industries (SPI) submitted the application for Salt Creek Heights Subdivision (S-15-07, RZ-6-07, PD-11-07) for the 272.9-acre subject site. Now that the Project Applicant has confirmed intent to proceed with the proposed Project, an interim service agreement is being drafted, and the detachment will be brought forth to the Shasta County Local Agency Formation Commission (LAFCO) prior to Project development.

3.3 PROJECT CHARACTERISTICS

State *CEQA Guidelines* require an EIR provide “[a] general description of the project’s technical, economic, and environmental characteristics, considering the principal engineering proposals, if any, and supporting public service facilities.” (State *CEQA Guidelines* §15142(c).)

The following actions are being requested as part of this proposed Project:

- *Tentative Subdivision Map Application S-15-07, Salt Creek Heights Subdivision.* Subdivide property to create 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units) designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites.
- *Planned Development Application PD-11-07, Salt Creek Heights Planned Development Plan.* A planned development request to allow single-family residential lots in an “RM” (Residential Multiple Family District) and lot-size and configuration exceptions to accommodate the various housing styles and to establish overall project-design parameters.
- *Rezoning Application RZ-6-07.* Rezone the entire Project site to apply the “PD” (Planned Development Overlay District).
- *Salt Creek Heights Development Agreement.* An agreement between the Project Applicant and the City allowing credit against the Project’s park and trails development fee obligations in exchange for construction of a public neighborhood park as a component of Project development. The Development Agreement also establishes the timing for construction of off-site sewer improvements to be completed by the Project Applicant, including a reimbursement agreement between the Project Applicant and City.



3.3.1 TECHNICAL CHARACTERISTICS

The Project proposes the development of 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units) designed with a mix of housing types, including single-family, multiple-family, cluster homes with garden courts, and custom home sites. More specifically, the proposed Project would construct the following: 12 single-family units with an approximate 3,500 square foot building on each lot, 49 single-family units with approximately 3,000 square foot buildings, 187 single-family units with approximately 2,500 square foot buildings, 96 clustered, garden court single-family units totaling approximately 5,800 square feet, and 96 apartment units totaling approximately 38,000 square feet. In addition, the Project proposes a 13.9 acre neighborhood park with amenities such as a soccer field, a softball field, basketball courts, a frisbee golf course, a ball wall, and play grounds.

EXISTING GENERAL PLAN LAND USE DESIGNATIONS

The proposed Project is located within an area designated in the *General Plan* as "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", General Office (GO), and "Greenway" (GWY). *General Plan* land use definitions are provided below:

- **Residential, 2 to 3.5 dwelling units per acre (2 to 3.5 u/a)** is described in the *General Plan* as a range that "allows for the development of subdivisions which portray a suburban lifestyle, with lots generally not smaller than 8,000 square feet. A typical development would include larger-than-average- to average-size homes organized around planned open-space areas and parks to provide visual relief and recreational opportunities for residents. The upper end of the density range is generally not appropriate for properties with natural slopes that exceed 8 percent."
- **Residential, 6 to 10 dwelling units per acre (6 to 10 u/a)** is described in the *General Plan* as the intent to "accommodate single-family detached units, attached single-family patio homes, and/or townhouses. Multiple-family projects and mobile home parks are also appropriate when located near the arterial or collector street system. Clustering is encouraged to provide common open spaces and recreational amenities to the residents. Generally, this designation is not appropriate on lots with slopes exceeding 8 percent, except on large projects where slope areas can be avoided or the units otherwise designed to be compatible with natural breaks in the hillside terrain."
- **General Office (GO)** is described in the *General Plan* as a land use classification for professional and business offices and personal service businesses with appropriate and compatible accessory uses. This classification may also be used for rest homes; nursing homes; day-care facilities; hospitals; religious, educational, cultural, and public utility uses; and financial institutions. Ancillary retail uses, such as pharmacies, are appropriate as are "sit-down" restaurants.
- **Greenway (GWY)** is described in the *General Plan* as natural open space including "slopes in excess of 20 percent and the 100-year floodplain of the Sacramento River and its tributary creeks and streams. Because of the inherent dangers to life and property and irrevocable damage to the natural environment, these natural land and water areas should not be urbanized or significantly altered. The specific limits of "Greenway" on any property must be determined by a topographic or flooding analysis particular to that property. These natural areas are an important local resource and serve as places in which flora or fauna can be maintained in its natural state. In addition, these areas provide relief from urbanization, reduce siltation from excessive grading, buffer various land use activities and transportation routes, are an important visual resource, and can be part of the City's urban trail system."



EXISTING ZONING DESIGNATIONS

The proposed Project site is zoned "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space). According to the City of Redding *Zoning Ordinance*, the purpose of the "RM" (Residential Multiple-Family) zoning designation is to provide areas for medium- to high-density multiple-family projects and other uses that are compatible with multiple-family development. The "RM-9" (Residential Multiple Family) zoning designation provides for 9 dwelling units per acre. The purpose of the "RS" (Residential Single Family) zoning designation is to provide for areas that will accommodate a variety of housing types including attached or detached single-family or 2-family dwellings. The "RS-2" (Residential Single Family) zoning designation provides for 2 to 3.5 dwelling units per acre. The "GO" (General Office) zoning designation allows for the development of professional and business offices and personal service businesses with appropriate and compatible accessory uses. This classification may also be used for rest homes; nursing homes; day-care facilities; hospitals; religious, educational, cultural, and public utility uses; and financial institutions on lot sizes no less than 7,500 square feet.

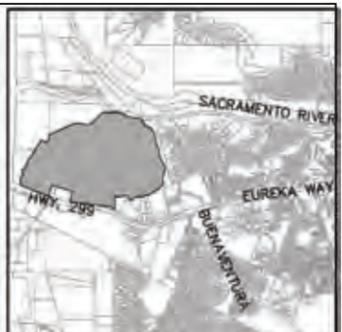
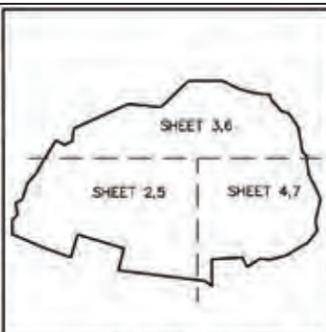
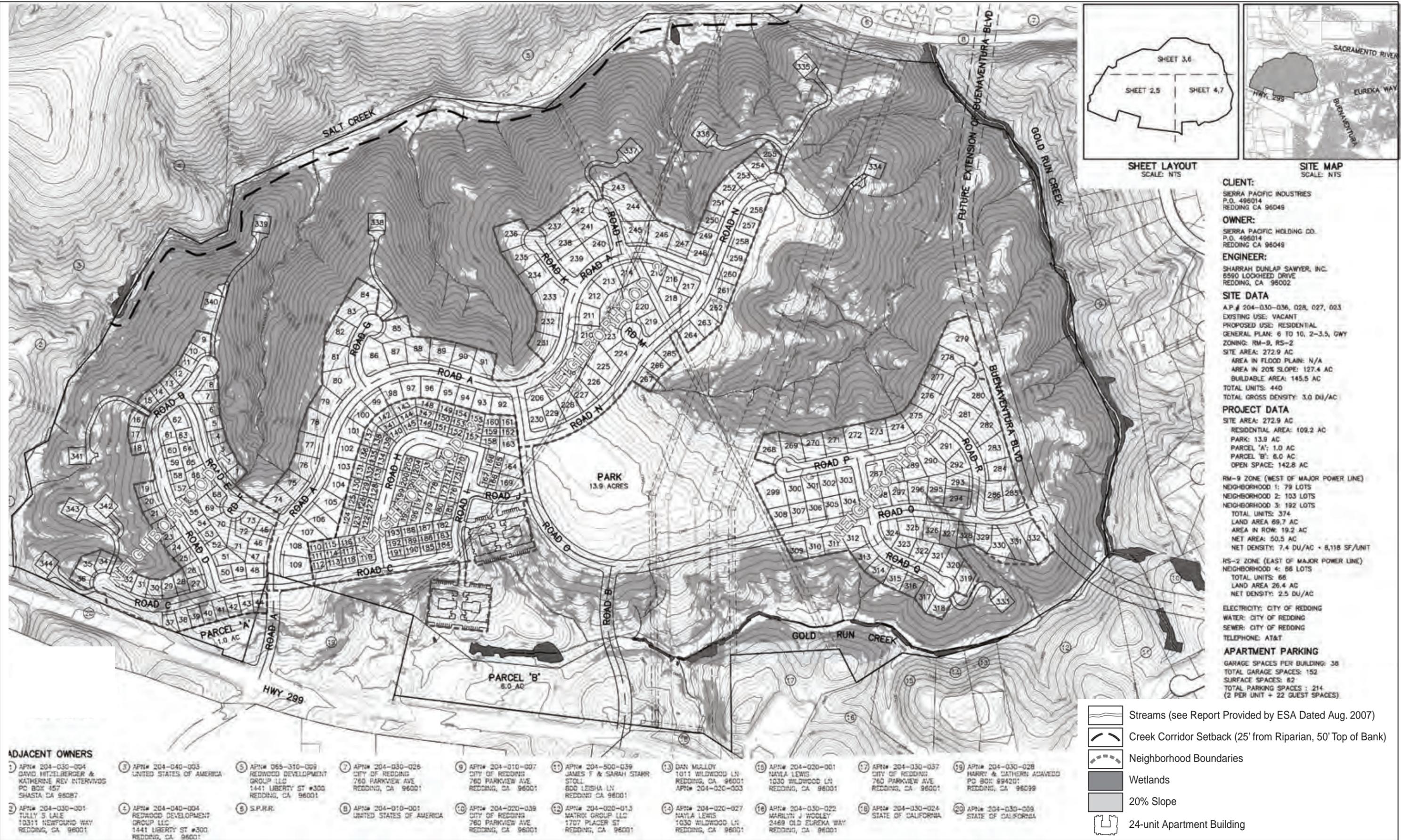
The "OS" (Open Space) zone designation is similar to the *General Plan* "Greenway"(GWY) designated land use in that "OS" (Open Space) are lands that have slopes in excess of 20 percent and/or are located within the 100-year flood elevation of the Sacramento River or one of its local tributaries. Areas zoned as "OS" (Open Space) may also be an area of land provided for the protection of plant and/or animal species that are rare, endangered, threatened, or otherwise identified as a species of concern by federal or state agencies. The boundaries and uses of each open space area are established at the time a development with property containing open space resources is proposed by the City.

PROPOSED ZONING DESIGNATION

The Project proposes to add the "PD" (Planned Development Overlay District) to the existing "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space) zoning designations. The "PD" (Planned Development Overlay District) is intended to facilitate development of properties designated for residential and commercial uses and for those areas designated as mixed-use neighborhood overlay areas in the *General Plan*. This process is used where greater flexibility in design is desired to provide a more efficient use of land than would be possible through strict application of conventional zone or land use district regulations and to assist in the development of housing opportunities for lower-income families and individuals. This flexibility also facilitates project design that may not otherwise be achieved under the provisions of the base zoning districts. In these cases, design considerations still play a role to ensure that the residential developments constructed are a positive addition to the community and provide a desirable living environment for residents. Refer to Figure 3-4a, 3-4b, 3-4c, and 3-4d, SUBDIVISION TENTATIVE MAP, for the layout of the parcels.

PROJECT SITE ACCESS

The extension of Buenaventura Boulevard is planned to serve as a primary access to the proposed Project (labeled Road O on the proposed site plan). The second proposed access will be provided by a new driveway located approximately 2,375 feet east of the Eureka Way (SR-299)/Lower Springs Road intersection. This internal road (labeled Road B on the proposed site plan) will provide connectivity from this access point to the proposed Project. The third access point is located along Eureka Way (SR-299) at its intersection with Lower Springs Road (labeled Road A on the proposed site plan).



CLIENT:
SIERRA PACIFIC INDUSTRIES
P.O. 496014
REDDING CA 96048

OWNER:
SIERRA PACIFIC HOLDING CO.
P.O. 496014
REDDING CA 96048

ENGINEER:
SHARRAH DUNLAP SAWYER, INC.
8590 LOCKHEED DRIVE
REDDING, CA 96002

SITE DATA
A.P.# 204-030-036, 028, 027, 023
EXISTING USE: VACANT
PROPOSED USE: RESIDENTIAL
GENERAL PLANE: 6 TO 10, 2-3.5, 0WY
ZONING: RM-9, RS-2
SITE AREA: 272.9 AC
AREA IN FLOOD PLANE: N/A
AREA IN 20% SLOPE: 127.4 AC
BUILDABLE AREA: 145.5 AC
TOTAL UNITS: 440
TOTAL GROSS DENSITY: 3.0 DU/AC

PROJECT DATA
SITE AREA: 272.9 AC
RESIDENTIAL AREA: 109.2 AC
PARK: 13.9 AC
PARCEL 'A': 1.0 AC
PARCEL 'B': 6.0 AC
OPEN SPACE: 142.8 AC

RM-9 ZONE (WEST OF MAJOR POWER LINE)
NEIGHBORHOOD 1: 79 LOTS
NEIGHBORHOOD 2: 103 LOTS
NEIGHBORHOOD 3: 192 LOTS
TOTAL UNITS: 374
LAND AREA 69.7 AC
AREA IN ROW: 19.2 AC
NET AREA: 50.5 AC
NET DENSITY: 7.4 DU/AC • 6,118 SF/UNIT

RS-2 ZONE (EAST OF MAJOR POWER LINE)
NEIGHBORHOOD 4: 66 LOTS
TOTAL UNITS: 66
LAND AREA 26.4 AC
NET DENSITY: 2.5 DU/AC

ELECTRICITY: CITY OF REDDING
WATER: CITY OF REDDING
SEWER: CITY OF REDDING
TELEPHONE: AT&T

APARTMENT PARKING
GARAGE SPACES PER BUILDING: 38
TOTAL GARAGE SPACES: 152
SURFACE SPACES: 62
TOTAL PARKING SPACES: 214
(2 PER UNIT + 22 GUEST SPACES)

- ADJACENT OWNERS**
- 1 APN# 204-030-004 DAVID MITZELBERGER & KATHERINE REV INTERVIVOS PC BOX 457 SHASTA, CA 96087
 - 2 APN# 204-030-001 TULLY S LALE 10311 NEWFOUND WAY REDDING, CA 96001
 - 3 APN# 204-040-003 UNITED STATES OF AMERICA
 - 4 APN# 204-040-004 REDWOOD DEVELOPMENT GROUP LLC 1441 LIBERTY ST #300 REDDING, CA 96001
 - 5 APN# 065-310-009 REDWOOD DEVELOPMENT GROUP LLC 1441 LIBERTY ST #300 REDDING, CA 96001
 - 6 S.P.R.R.
 - 7 APN# 204-030-026 CITY OF REDDING 760 PARKVIEW AVE REDDING, CA 96001
 - 8 APN# 204-010-001 UNITED STATES OF AMERICA
 - 9 APN# 204-010-007 CITY OF REDDING 760 PARKVIEW AVE REDDING, CA 96001
 - 10 APN# 204-020-038 CITY OF REDDING 760 PARKVIEW AVE REDDING, CA 96001
 - 11 APN# 204-500-039 JAMES F & SARAH STARR STOLL 800 LEISHA LN REDDING, CA 96001
 - 12 APN# 204-020-013 MATRIX GROUP LLC 1707 PLACER ST REDDING, CA 96001
 - 13 DAN MULLOY 1011 WILDWOOD LN REDDING, CA 96001 APN# 204-020-003
 - 14 APN# 204-020-001 NAYLA LEWIS 1030 WILDWOOD LN REDDING, CA 96001
 - 15 APN# 204-030-057 CITY OF REDDING 760 PARKVIEW AVE REDDING, CA 96001
 - 16 APN# 204-030-022 MARLYN J WOODLEY 2469 OLD EUREKA WAY REDDING, CA 96001
 - 17 APN# 204-030-028 HARRY & CATHERINE ADAMEDO PC BOX 894201 REDDING, CA 96099
 - 18 APN# 204-030-024 STATE OF CALIFORNIA
 - 19 APN# 204-030-009 STATE OF CALIFORNIA

- Streams (see Report Provided by ESA Dated Aug. 2007)
- Creek Corridor Setback (25' from Riparian, 50' Top of Bank)
- Neighborhood Boundaries
- Wetlands
- 20% Slope
- 24-unit Apartment Building

Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07), REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Subdivision Tentative Map

Figure 3-4a

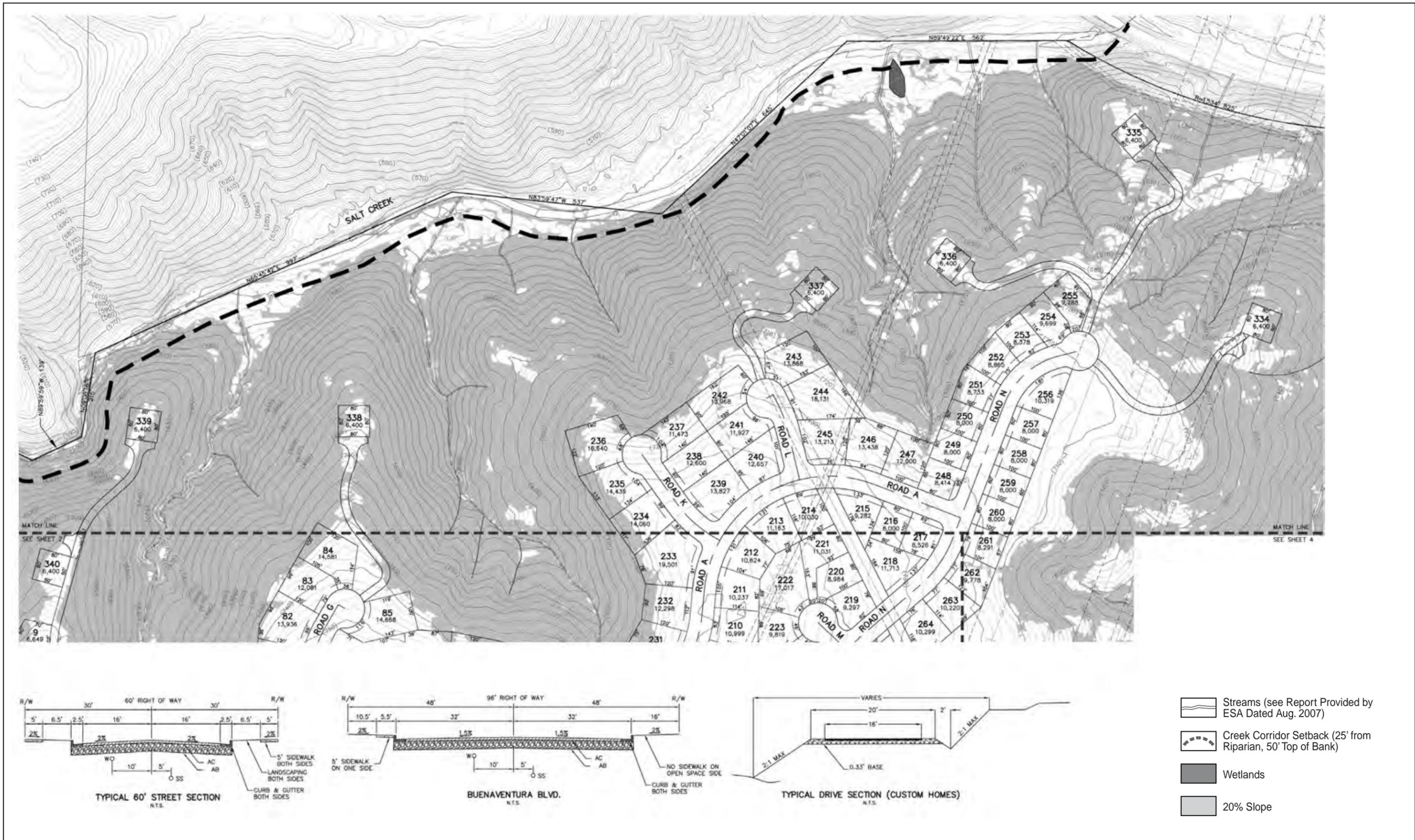


Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.

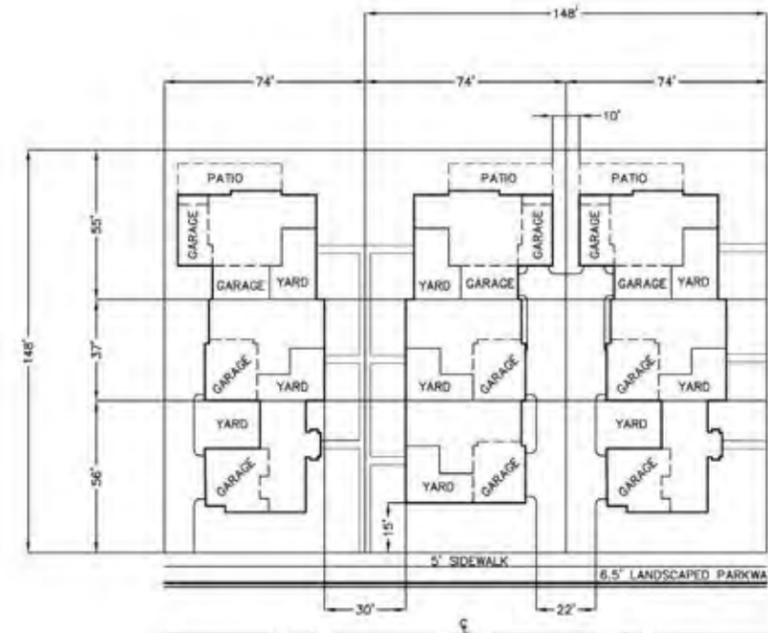


SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR
Subdivision Tentative Map

Figure 3-4b



Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.



-  Streams (see Report Provided by ESA Dated Aug. 2007)
-  Wetlands
-  20% Slope

Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR
Subdivision Tentative Map

Figure 3-4d



INFRASTRUCTURE IMPROVEMENTS

The proposed Project will include all necessary on- and off-site sewer and water infrastructure improvements to support the Project. The proposed Project's sanitary sewer and domestic water infrastructure consists of connection to off-site mains that originate near Eureka Way (SR-299) and the provision for on-site delivery systems necessary to support the proposed Project.

Sewer Connection

The proposed sewer main connects to an existing stub on Eureka Way (SR-299), then runs northwest along Buenaventura Boulevard to the proposed Project's eastern boundary. The on-site sanitary sewer system will include four private lift stations where the utility will need to break grade. Refer to Figure 3-5a, UTILITIES PLAN and Figure 3-5b, OFF-SITE SEWER, for an illustration of on- and off-site infrastructure improvements.

Water Distribution

The proposed domestic water system is comprised of the following distribution facilities. Refer to Figure 3-5a, UTILITIES PLAN, and Figure 3-5c, OFF-SITE WATER.

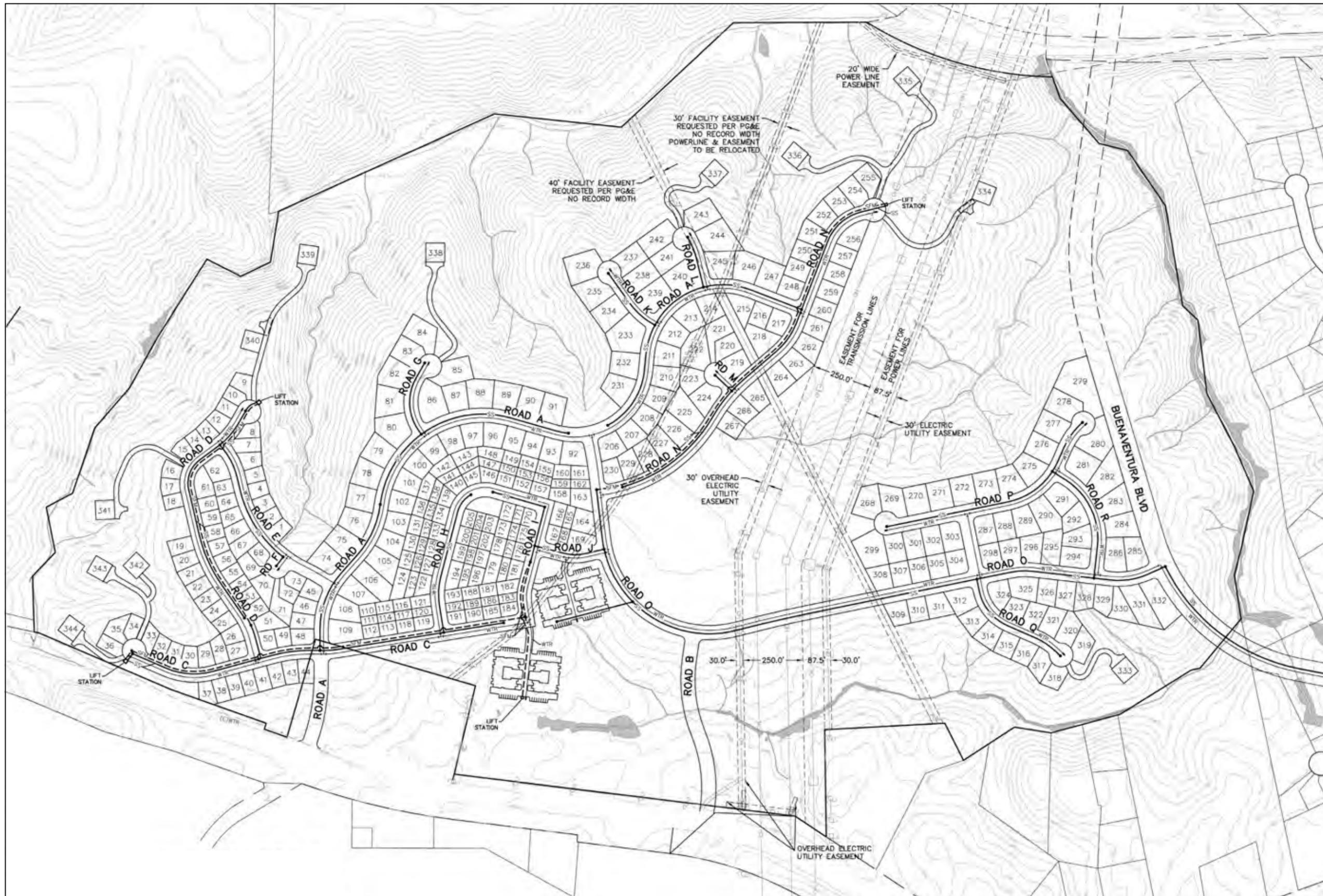
- New 16-inch water main in Eureka Way (SR-299) from Ridge Road to Road A (off-site);
- New 12-inch water mains installed at the following locations:
 - ▶ Road A from Eureka Way (SR-299) to Road O (approximately 400 feet located off-site);
 - ▶ Road C from Road A to Road O (internal to the subdivision);
 - ▶ Road O from Road A to Buenaventura Boulevard (internal to the subdivision); and
 - ▶ Buenaventura Boulevard from Road O to Eureka Way (SR-299) (off-site along Buenaventura Boulevard).

ROADWAYS

Roadway cross-sections through the proposed Project will follow standard roadway design practices, with crowned streets leading to jurisdictional standard curb and gutter. Buenaventura Boulevard is proposed as a 96-foot right-of-way (ROW) with a curb face to curb face width of 64 feet. A sidewalk is proposed on one side, with existing ground being maintained to the extent possible on the open space side of the roadway. The interior 60-foot roadways follow standard design criteria, with a 2 percent crowned cross-slope to curb and gutter on both sides of the roadway. These interior streets will have 5-foot separated sidewalks with 6.5-foot landscaping buffers to the back of curb (refer to Figure 3-4c for proposed street cross sections). Final street improvement sections are subject to approval of the tentative map and "PD" Plan by the City Council.

GRADING

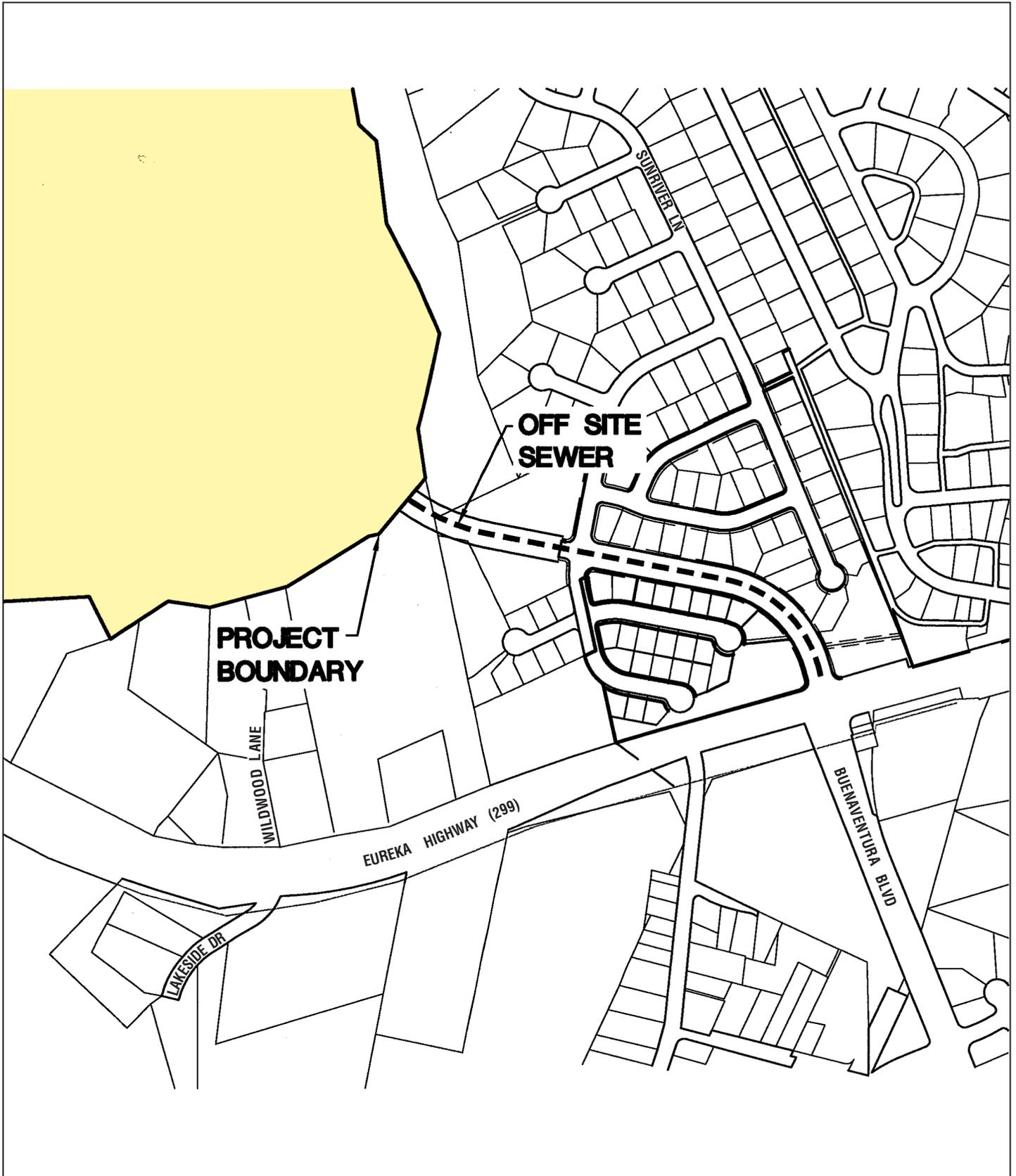
Grading operations will occur during eight separate phases (refer to Figures 3-6a, 3-6b, and 3-6c, PRELIMINARY GRADING). The majority of grading for the Project is within the gently sloped terrace areas in the higher elevations of the site. Approximately one-third of the total Project area will be graded for building sites, including approximately 690,000 cubic yards (CY) of cut and 600,000 CY of fill (refer to Figure 3-7, CUT-FILL DIAGRAM). This will result in balanced grading by borrowing any needed cut or placing any additional fill on an adjacent phase. The total grading will be balanced on-site; there will be no off-site transportation of grading materials.



-  Streams (see Report Provided by ESA Dated Aug. 2007)
-  Creek Corridor Setback (25' from Riparian, 50' Top of Bank)
-  Wetlands
-  24-unit Apartment Building

Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR



Source: Sharrah Dunlap Sawyer, Inc., April 2008.

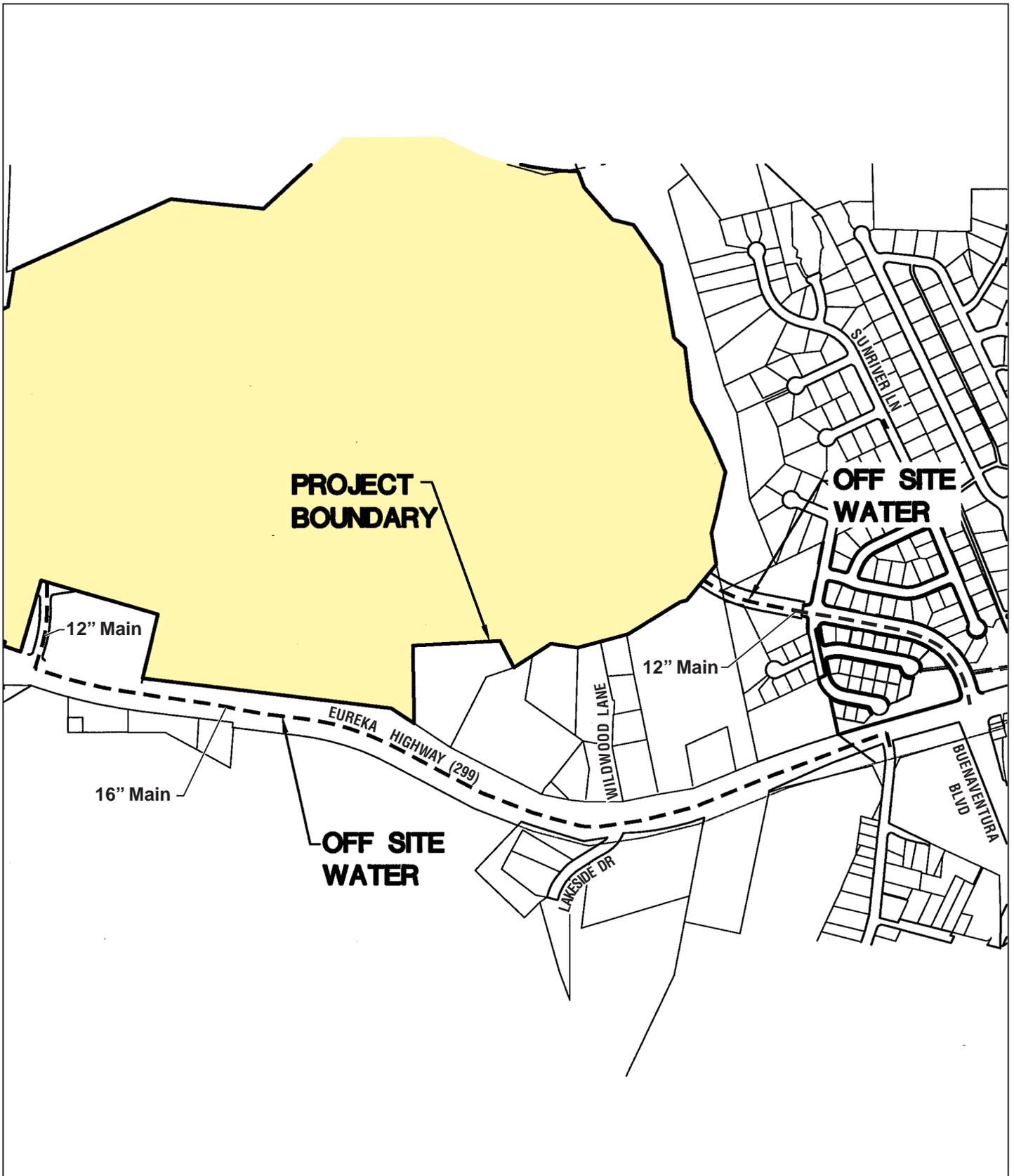
SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Off-Site Sewer

Figure 3-5b



11/19/08 JN 60-100416-15334 MAS



Source: Sharrah Dunlap Sawyer, Inc., April 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

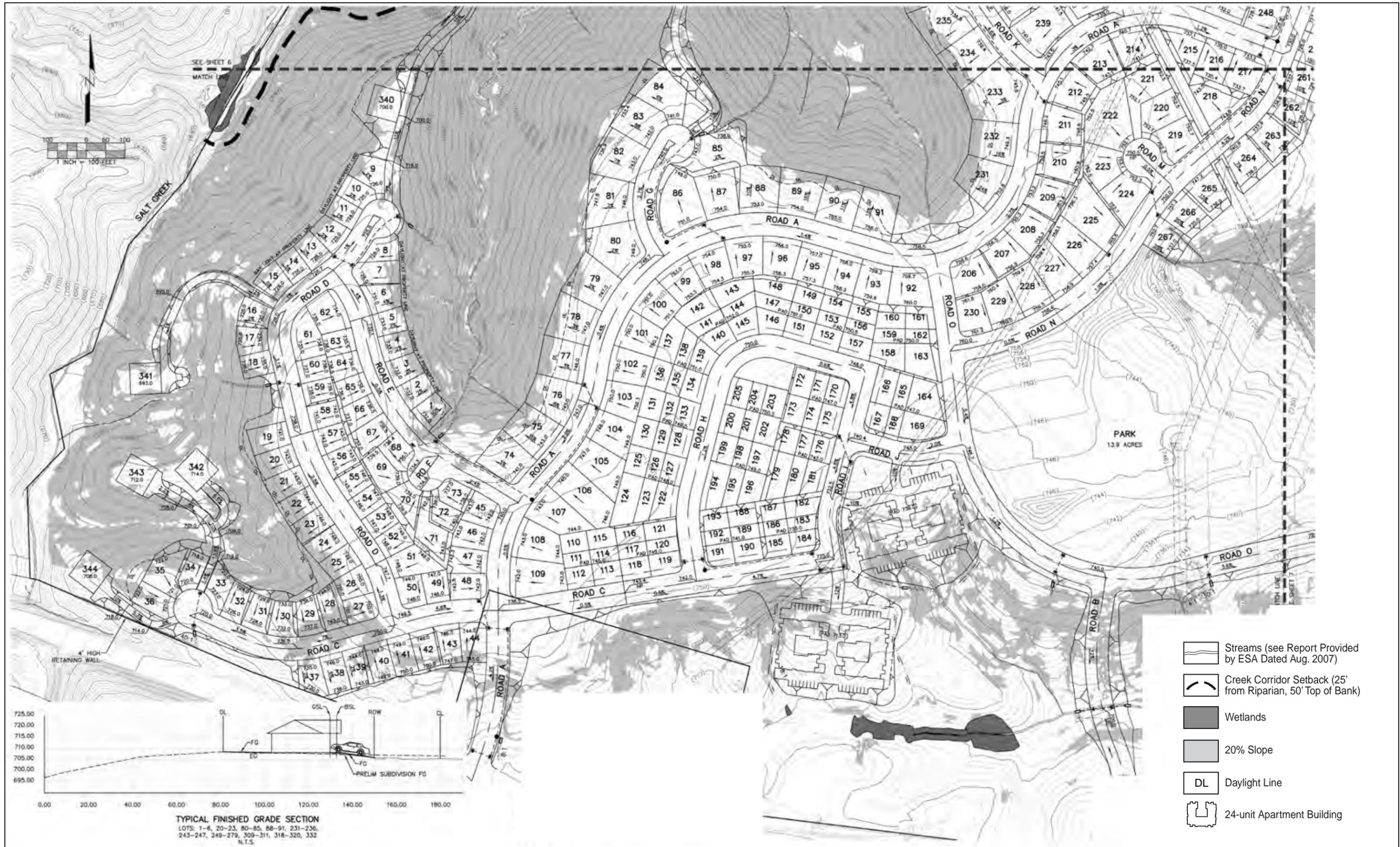
Off-Site Water

Figure 3-5c



not to scale

12/10/08 JN 60-100416-15334 MAS



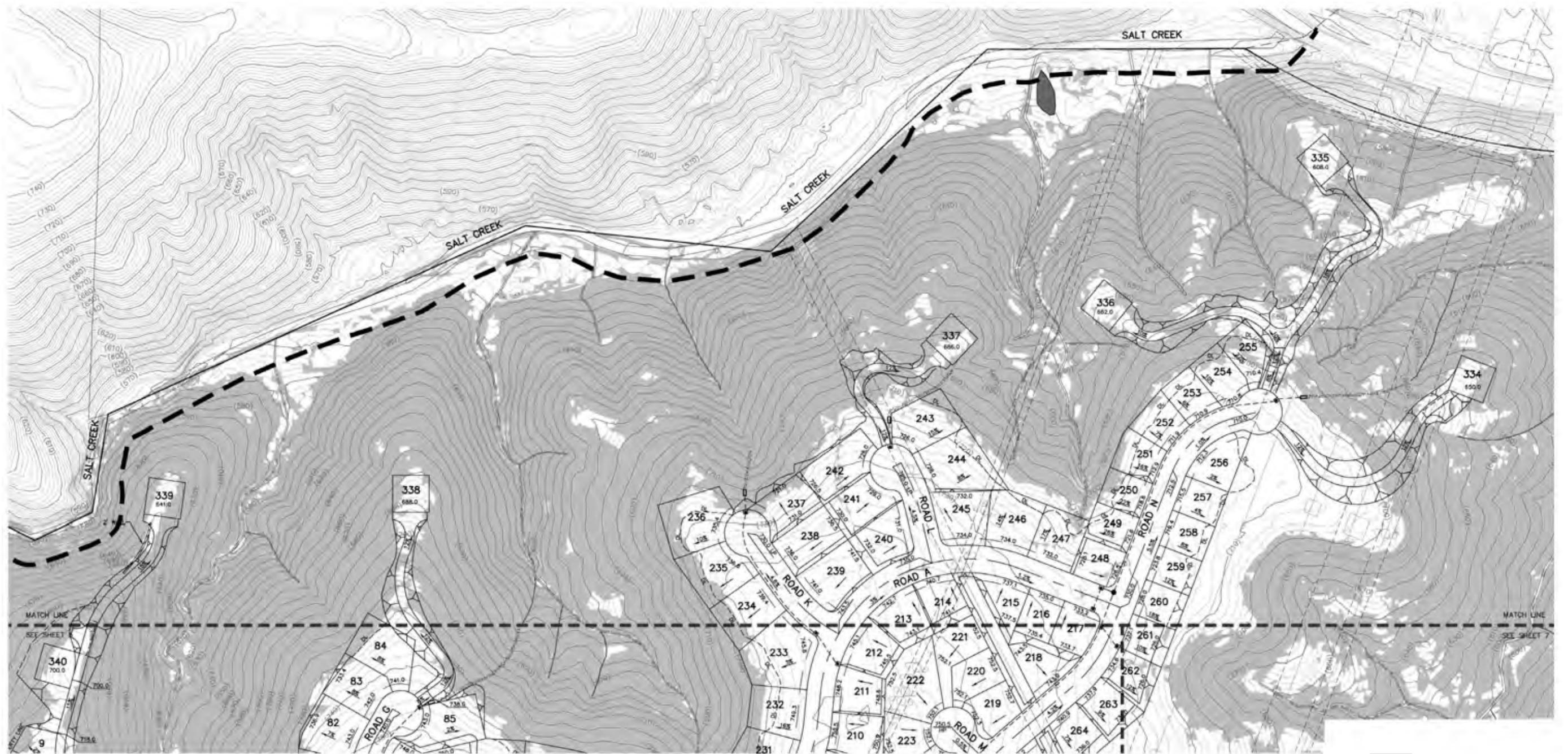
Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

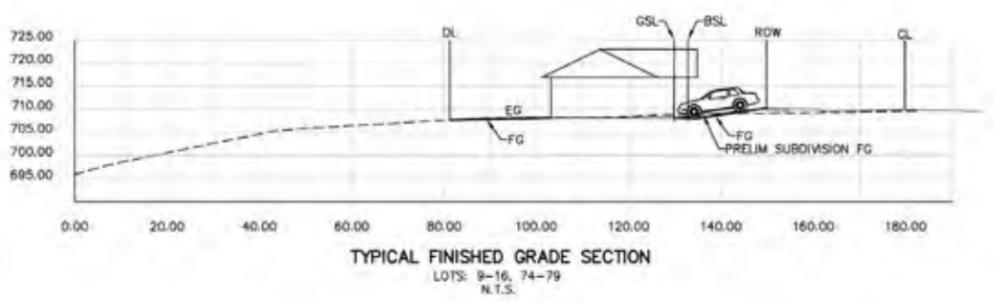


Preliminary Grading

Figure 3-6a



-  Streams (see Report Provided by ESA Dated Aug. 2007)
-  Creek Corridor Setback (25' from Riparian, 50' Top of Bank)
-  Wetlands
-  20% Slope
-  DL Daylight Line



Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.



-  Streams (see Report Provided by ESA Dated Aug. 2007)
-  Wetlands
-  20% Slope
-  DL Daylight Line

Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.

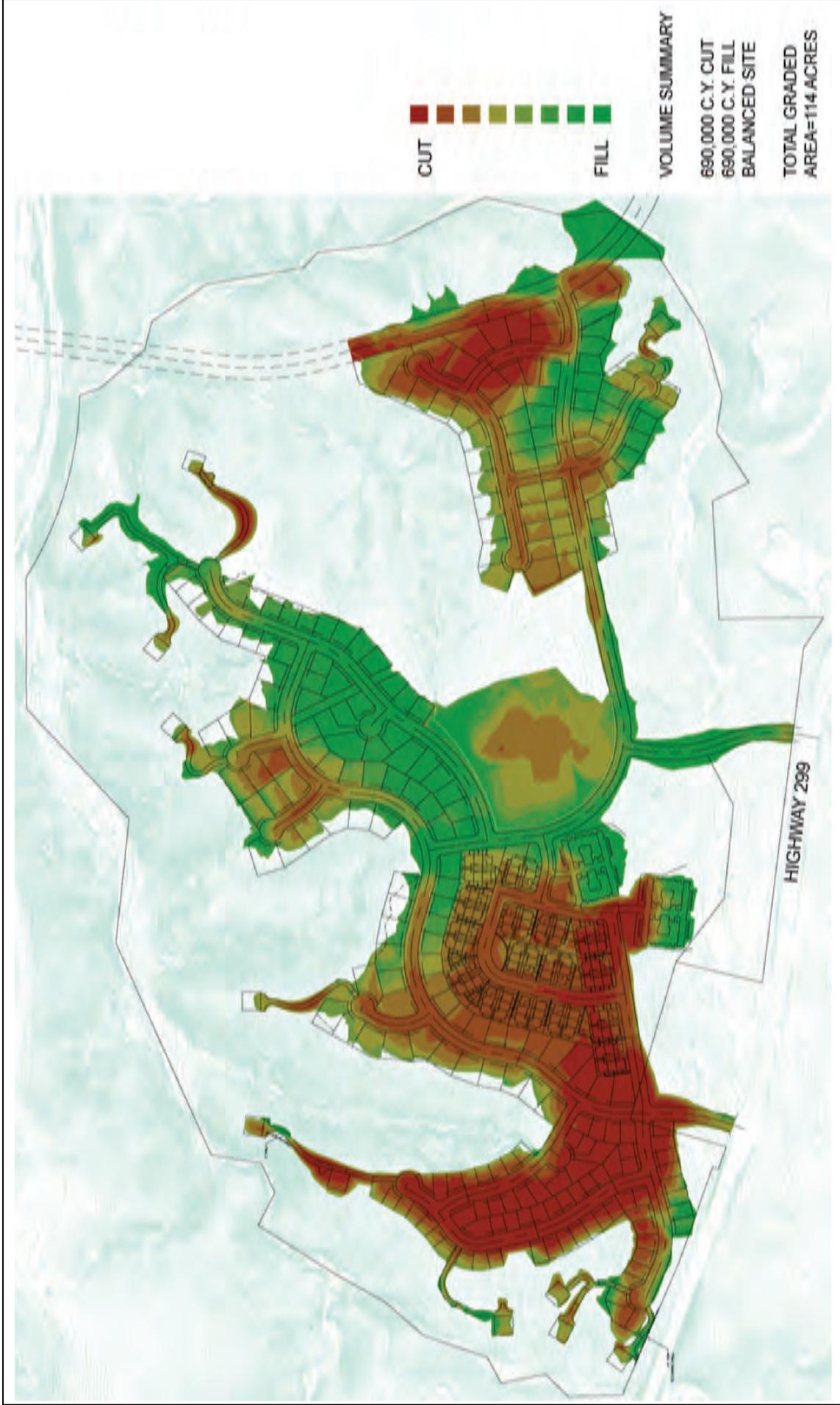
RBF CONSULTING
 3/25/09 JN 60-100416-15334 MAS

0 225'
 APPROXIMATE

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Preliminary Grading

Figure 3-6c



Source: Sharrah Dunlap Sawyer, Inc., 2009.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Cut-Fill Diagram

Figure 3-7



Table 3-2, EARTHWORK VOLUME SUMMARY, illustrates earthwork quantities anticipated for each development phase.

TABLE 3-2
Earthwork Volume Summary

Phase	Cut (CY)	Fill (CY) 15% Shrink Not Included	Net Result (CY) 15% Shrink Included
1	118,000	148,000	52,000 (Import)
2	52,000	112,000	77,000 (Import)
3	109,000	1,000	108,000 (Export)
4	205,000	9,000	194,000 (Export)
5	150,000	9,000	140,000 (Export)
6	22,000	55,000	41,000 (Import)
7	16,000	39,000	29,000 (Import)
8	18,000	227,000	243,000 (Import)
Total	690,000	600,000	0 (Import / Export)

Source: Sharrah Dunlap Sawyer, Inc., 2009.

SUBDIVISION DESIGN

The proposed subdivision can be divided into the following four neighborhoods:

TABLE 3-3
Development Summary

Neighborhood	Number of Lots / Units / Density
Neighborhood 1:	79 lots
Neighborhood 2:	103 lots
Neighborhood 3:	192 lots
Total Units	374 units
Developed Area	69.7 acres
Park Area	13.9 acres
Area in Right-of-Way	19.2 acres
Net Area	50.5 acres
Net Density	7.4 dwelling units/acre: 8,118 square feet/unit
Neighborhood 4:	66 lots
Total Units	66 units
Developed Area	26.4 acres
Net Density	2.5 dwelling units/acre

Source: Sharrah Dunlap Sawyer, Inc., 2009.



The proposed subdivision design includes the following features:

- Extension of Buenaventura Boulevard to serve as an access to the proposed development and two access locations off of Eureka Way (SR-299).
- Construction of an approximate 13.9-acre neighborhood park centrally within the subdivision.
- Connection to the Sacramento River Trail via the on-site connection to Buenaventura Trail.

3.3.2 ECONOMIC CHARACTERISTICS

Development of the proposed Project would have fiscal impacts on the City similar to other residential subdivisions, including additional street maintenance and the provision of police and fire service. Based on the average household size as recorded in the United States Census, the proposed residential uses would result in a direct population increase of approximately 1,069 persons (440 households x 2.43 persons per household = 1,069 persons). The City would provide public services to the proposed Project, including, but not limited to, police, fire, parks, and flood control. The proposed Project residents would generate revenue in the form of property taxes and fees, which would be available to the City to fund public services to the Project site. Revenue for capital improvements would also be generated by the Project directly through various forms of development fees, including but not limited to fire, facilities, traffic, schools, and parks.

3.3.3 PHASING

Assuming economic conditions are conducive for buyers to purchase homes, implementation of the proposed Project will be constructed in eight phases over an anticipated eight year period. It is assumed that site work associated with each individual phase will take a single construction season (approximately eight months), depending upon factors such as weather conditions and acquisition of necessary approvals from the various utility purveyors and resource agencies. Table 3-4, CONSTRUCTION PHASING, below, outlines the gross acres, number of dwelling units, and product type anticipated for each phase of development. Also refer to Figure 3-8, PRELIMINARY PHASING.

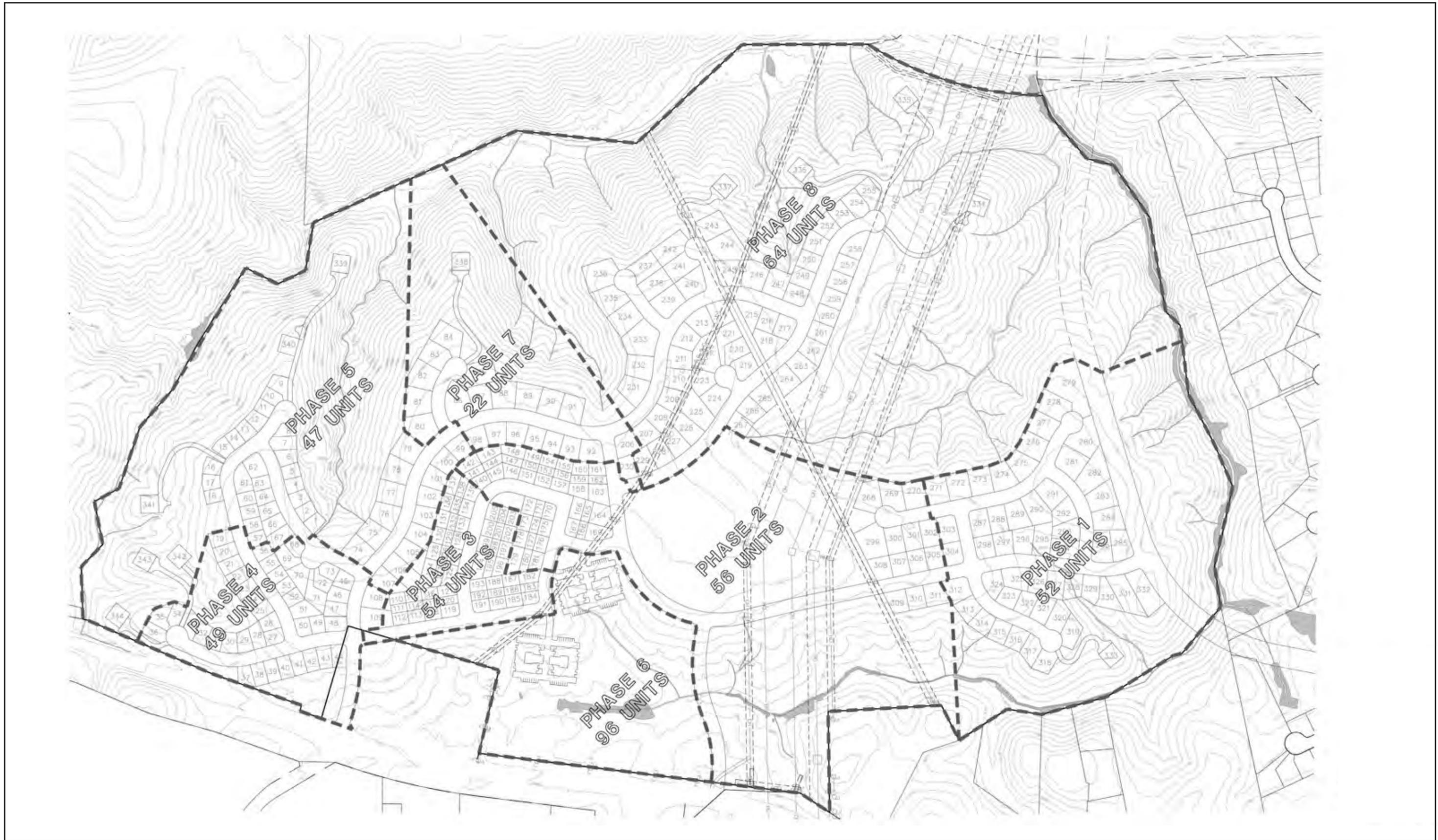
**TABLE 3-4
 Construction Phasing**

Phase	Gross Acres	Unit Yield	Product Type
1	36.0* / 38.3**	52	SFR, Custom
2	44.3	56	SFR, MFR
3	7.3* / 7.4**	54	MFR
4	12.5* / 13.7**	49	SFR
5	40.1	47	SFR, Custom
6	16.8	96	MFR
7	17.9	22	SFR, Custom
8	98.0	64	SFR, Custom

* Gross On-Site Acreage

** Includes impacts due to off-site road extensions: Buenaventura Blvd extension abutting Phase 1, a portion of Road C in Phase 3, portion of Road A in Phase 4.

Source: Sharrah Dunlap Sawyer, Inc., 2009.



Source: Sharrah Dunlap Sawyer, Inc., 3/11/09.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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RBF CONSULTING

0 400'
 APPROXIMATE

3/25/09 JN 60-100416-15334 MAS

Preliminary Phasing

Figure 3-8



3.3.4 ENVIRONMENTAL CHARACTERISTICS

Environmental characteristics associated with the proposed Project are discussed in detail within Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES.

3.4 PROJECT OBJECTIVES

In accordance with State *CEQA Guidelines* §15124(b), the objectives for the proposed Project include the following:

- Support a mixture of housing types and designs within the overall density allowed by the *General Plan*;
- Create distinct housing type areas with common design characteristics to foster neighborhood cohesiveness;
- Provide a centrally located, easily accessible neighborhood park situated in a way that minimizes potential impacts to adjacent residences;
- Create a balance between development and the natural environment by minimizing disturbance of sensitive land forms and habitats; and
- Integrate a safe and efficient neighborhood street and pedestrian system.

3.5 INTENDED USES OF THE EIR

This EIR has been prepared in accordance with CEQA, as amended (PRC §21000, et seq.) and the State *CEQA Guidelines*. This report also complies with the rules, regulations, and procedures for implementation of CEQA as adopted by the City Council. This EIR has been prepared to assess the potential environmental impacts that may arise in connection with actions related to the implementation of the proposed Project. It is the intent of the City of Redding to evaluate the Project within the framework of this EIR so that ultimate development of the proposed Project can be determined without additional environmental documentation.

3.6 AGREEMENTS, PERMITS AND APPROVALS

The City, as Lead Agency for the proposed Project, has discretionary authority over the primary Project proposal. Upon completion of the environmental review and prior to construction, the Project will be reviewed through standard City plan check procedures to verify that the Project conforms to all applicable City design criteria. To implement this Project, the Project Applicant would need to obtain, at a minimum, the following discretionary permits and approvals:

3.6.1 CITY OF REDDING

- *Final Subdivision Map*. A Final Subdivision Map is required to subdivide the proposed Project site.
- *Improvement Plans*. Utility and public facility improvements are required with Project implementation.



-
- *Grading Permits.* Grading Permits will be required for each development phase.
 - *Building Permits.* Building Permits will be required to construct the proposed residential structures.

3.6.2 OTHER AGENCIES

- *U.S. Army Corps of Engineers.* Prior to issuance of a City grading permit effecting any jurisdictional waters as identified in the Project's wetland delineation, the Project Applicant shall file a pre-construction notification with the U.S. Army Corps of Engineers (Corps) and secure any necessary Corps permit resulting from said consultation.
- *California Regional Water Quality Control Board.* A Construction Activity Storm Water Permit and a Storm Water Pollution Prevention Plan shall be prepared in accordance with the requirements. In addition, a Section 401 Water Quality Certification (401 Certification) will be required.
- *California Department of Fish and Game.* A 1602 Streambed Alteration Agreement will be required for work completed within any on-site jurisdictional drainage.
- *National Oceanic & Atmospheric Administration (National Marine Fisheries Service) and U.S. Fish & Wildlife Service.* As the federal permitting agency for this Project, the Corps may request consultation with the National Oceanic & Atmospheric Administration (National Marine Fisheries Service) under Section 7 of the Federal Endangered Species Act (FESA).
- *California Department of Transportation - District 02.* A Caltrans encroachment permit will be required for work to be completed within the state owned right-of-way of Eureka Way (SR-299).



SECTION 4.0: Basis for Cumulative Analysis



4.0 BASIS OF CUMULATIVE ANALYSIS

Section 15355 of the State *CEQA Guidelines*, as amended, provides the following definition of cumulative impacts: "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Pursuant to §15130(a) of the aforementioned State *CEQA Guidelines*, cumulative impacts of a project shall be discussed when the project's effect is cumulatively considerable, as defined in §15065(c) of the State *CEQA Guidelines*. The Initial Study Checklist provided as part of Appendix 15.1, INITIAL STUDY/NOTICE OF PREPARATION, indicates that the proposed Project may yield potentially significant cumulative effects. As a result, Section 5.0, DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES, of this EIR provides a cumulative impact assessment for each applicable environmental issue, and does so to a degree which reflects each impact's severity and likelihood of occurrence.

As indicated above, a cumulative impact involves two or more individual effects. Per State *CEQA Guidelines* §15130, the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness. Per State *CEQA Guidelines* §15130(b), the following elements are necessary in an adequate discussion of significant cumulative impacts:

1. Either:
 - a. A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency; or
 - b. A summary of projections contained in an adopted General Plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.
2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information, stating where that information is available.
3. A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.
4. With some projects, the feasible mitigation for cumulative impacts may involve the adoption of ordinance or regulations rather than the imposition of conditions on a project-by-project basis.

Cumulative projects are discussed in terms of impacts resulting from buildout of the City's *General Plan*. According to Tables 1-2 and 1-3 of the Community Development and Design Element of the *General Plan* (General Plan Holding Capacity – Residential Land Uses and General Plan Holding Capacity – Non-Residential Land Uses), the City could accommodate the following land uses:

- 85,138 dwelling units (du);
- 9,220,000 square feet of office commercial uses;



- 26,332,000 square feet of neighborhood/shopping center/regional/general/ mixed core commercial uses; and
- 94,543,000 square feet of heavy commercial/industrial uses.

With respect to traffic and circulation, it should be noted that the 2030 traffic volumes at the study intersections were estimated by using the Shasta County Travel Demand Forecasting (TDF) model as a baseline. Traffic models use a number of variables to forecast future volumes including, but not limited to, socio-economic data, land use, and network assumptions. The TDF model is described in detail in the *Shasta County Travel Demand Forecasting Model Development Report*.

PENDING SHORT-TERM DEVELOPMENT PROJECTS

City of Redding staff provided a list of land development projects within the vicinity of the proposed Project that could be regarded as “approved” or “pending approval” for construction in the near-term. The following projects have been proposed for development:

- **West Ridge Master Plan** - This is a pending project that consists of approximately 296 single-family residential units on approximately 400 acres. The proposed project area is located in the western portion of the City of Redding, southwest of the downtown. The project is located northeasterly of Powerline Road, easterly of Placer Road, and westerly of the Canyon Creek Road terminus at Blazingwood Drive. The project consists of a number of entitlements including General Plan Amendment applications (GPA-7-03 and GPA-3-04), rezoning application (RZ-11-03), two tentative subdivision map applications (S-19-03 and S-4-04), and an annexation request (AN-1-04).
- **Matrix Subdivision** - This proposed project includes a General Plan Amendment, rezoning, and tentative subdivision map. The project site is located north of Eureka Way (SR-299), approximately 0.25 miles west of the intersection with Buenaventura Boulevard. The tentative subdivision map application is a request to subdivide approximately 14 acres for creation of 15 single-family residential lots on property located at 4050 and 4090 Eureka Way.
- **Shasta College Health Sciences and University Center** - This is an approved project consisting of a 43,800 square foot, two story building. Shasta Community Health and the college both have their dental programs housed on the first floor. The site also houses the college's nursing program on the second floor, including the University Center meeting spaces and faculty office space.

It should be noted that the quantification of cumulative impacts is difficult and often requires speculative estimates of impacts including, but not limited to, the following: the geographic diversity of impacts in the planning area (impacts of future development may affect different areas); variations in time of impacts; and changes in data for buildout projections following subsequent approval. However, every attempt has been made herein to make qualitative judgments of the combined effects of, and relationship between, land uses and potential impacts.



5.0 DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

5.1 LAND USE AND RELEVANT PLANNING

Information in this section is based on site surveys conducted by RBF Consulting (RBF) between August and October 2008. RBF also utilized ground and aerial photographs for the on-site and surrounding land use analysis, as well as the following reference documents: the City of Redding *General Plan* and the City of Redding *Municipal Code* (RMC), as well as other adopted plans and policies. The purpose of this section is to identify the existing land use conditions, to analyze Project compatibility with existing uses and consistency with relevant planning policies, and to recommend mitigation measures to eliminate or reduce the significance of potential impacts.

5.1.1 EXISTING CONDITIONS

The following section discusses the existing land uses in the Project area and land use conditions, such as type of use and densities adjacent to the Project site that would influence land use compatibility. The environmental setting consists of the physical conditions or existing land uses on the Project site and in the surrounding areas.

PROJECT LOCATION

The proposed Project is located at 4200 Eureka Way (APNs 204-030-036, -027, and -023), within the western portion of the City of Redding (Township 32 North, Range 5 West, within portions of Sections 32 and 33, Mount Diablo Base and Meridian). The Project site is located along the north side of Eureka Way (SR-299) at the western City limits. Salt Creek forms the western and northern boundaries of the proposed Project, and Gold Run Creek generally forms the eastern Project boundary.

EXISTING LAND USE

The approximate 272.9-acre Project site is currently undeveloped land that has been previously mined. The proposed Project's topography varies from a nearly flat terrace at the center of the site, to moderately steep to very steep canyons. At the landscape level, the topography consists of incised canyons that slope to the northeast towards the Sacramento River. The hydrology of the proposed Project has been altered due to past mining activities. Elevation within the proposed Project ranges from 520 feet above mean sea level (msl) to 740 feet above msl. The site consists of a relatively flat ridge top that drops sharply to the north and east, and gradually towards the southeast. Habitats occurring within and adjacent to the proposed Project include annual grassland, mixed chaparral, blue oak woodland, open water, riparian wetland, and seasonal wetland. The only current land use within the proposed Project site are electric utility corridors, with several utility maintenance roads crossing the proposed Project site. Eureka Way (SR-299) forms the southern boundary of the proposed Project (refer to Figure 5.1-1, ON-SITE AND SURROUNDING LAND USES).



**SECTION 5.0: Description of Environmental Setting,
Impacts and Mitigation Measures**

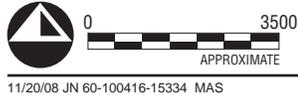




SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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On-Site and Surrounding Land Uses

Figure 5.1-1



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SURROUNDING LAND USE

The surrounding land uses consist of low density residential, commercial, and natural open space. The Sacramento River is located north of the proposed Project, Gold Run Creek forms the eastern boundary of the proposed Project, Eureka Way (SR-299) forms the southern boundary, and Salt Creek forms the western boundary of the proposed Project.

North

Land to the north of the proposed Project is designated "Greenway" (GWY), and consists primarily of open space and the Sacramento River. The City of Redding's Sacramento River Trail is located north of the proposed Project. Salt Creek is also adjacent to the proposed Project's northern boundary. Existing zoning north of the proposed Project consist of "OS" (Open Space) and "RS-2.5" (Residential Single Family).

East

Land to the east of the proposed Project consists of single-family residences and undeveloped land. Gold Run Creek forms the eastern boundary of the proposed Project. Single-family residential uses designated "Residential, 2 to 3.5 units per acre" and zoned "RS-2" (Residential Single Family) are located to the east of Gold Run Creek.

South

Land to the south of the proposed Project contain residences, the Old Millhouse Deli, an electric substation, and Eureka Way (SR-299). Undeveloped land and residences are located to the south of Eureka Way (SR-299). This land is designated "Residential, 2 to 3.5 units per acre," and "Residential 1 to 5 units per acre." In addition, a "Public Facility" land use designation is located adjacent to the southern boundary of the proposed Project. Existing zoning to the south consists of "PF" (Public Facility), "RS-2" (Residential Single Family), and "RS-3" (Residential Single Family).

West

Land to the west is primarily undeveloped, along with a few single-family residential units. Salt Creek forms the western boundary of the proposed Project. Land to the west of the proposed Project is not within the City of Redding's City limits; therefore, Shasta County land use and zoning designations apply. Existing Shasta County land use designations west of the proposed Project consist of "RA" (Rural Residential) and "OS" (Open Space). Existing Shasta County zoning designations consist of "R-R" (Rural Residential) and "U" (Unclassified).

5.1.2 RELEVANT PLANNING POLICIES

The Project's relationship with the *General Plan*, the RMC, and other related planning policy documents are described below. Section 5.1.5, IMPACTS, assesses the proposed Project's relationship to pertinent goals and policies of the *General Plan*.



CITY OF REDDING GENERAL PLAN

The City of Redding's *General Plan* was adopted in October 2000 and serves as the overall guiding policy document for land use, development, and environmental quality in the City of Redding for the next 20 years. The *General Plan* includes policies, standards, implementation programs, quantified objectives (for housing), the General Plan Diagram, and circulation diagrams. The *General Plan* comprises a set of interrelated and internally consistent components ("elements") specific to various attributes of either the physical or cultural environment. These elements are: Community Development and Design, Transportation, Natural Resources, Health and Safety, Noise, Housing, Recreation, Economic Development, Public Facilities and Services, and Air Quality. The *General Plan* was utilized throughout this EIR as the fundamental planning document governing development on the Project site. Background information and policy information from the *General Plan* are cited in several sections of the EIR.

The *General Plan* divides the City's Planning Areas into five primary sectors, each of which is shaped by its unique characteristics, history, and issues. The proposed Project is located in the Central and West Redding Planning Area, which is described as follows:

Central Redding is the location of the City's original commercial and office core. Local government facilities and most of its older residential districts are also located here. Spreading outward from the original town site astride the railroad in a grid pattern typical of the time, Redding grew north and east to the edge of the bluff that borders the Sacramento River, south along the highway and railroad spine, and west into the hills and gullies. Extension of the early street pattern across the ravines created unusable lots and "paper" streets that remain undeveloped today.

West Redding is not only home to some of the City's more popular neighborhoods, but also home to Mercy Hospital and numerous doctors' office complexes and professional offices. Until such time as Downtown redevelopment occurs or additional multiple-family sites are identified, Central and West Redding will have a significant imbalance in available housing opportunities. With the construction of Interstate 5, most new commercial investment was directed to locations other than Central Redding. The expansion of County government offices, Redding Medical Center, and Mercy Hospital also promoted office construction along Court, Oregon, and West Streets, displacing older residential uses.

Community and Design Element

The General Plan Diagram, together with the policies and implementation programs in the Community and Design Element, determine the location, intensity, design, and quality of new development, as well as the preservation of those natural assets that are key to Redding's identity. These policies also provide the foundation for policies in other elements of the *General Plan*. The two principal components of this Element are land use and design of the City's built environment. Land use policies and the General Plan Diagram determine how people can use and develop their land. A key feature of this element is community design, which achieves a proper balance between the natural environment and the built environment. While land use policies establish the balance of land uses in the City, community design policies establish guidelines for the shape and form of the City.

The City's General Plan Diagram graphically depicts the *General Plan's* development policies by showing the desired arrangement and location of land uses. The classifications shown on the Diagram designate the types of uses that are allowed within each area of the City.



On- and Off-Site General Plan Designations

Figure 1-1 (Primary and Secondary Growth Areas) contained in the *General Plan* shows the entire Project site within the City's established Primary Growth Area (refer to Figure 5.1-2, PRIMARY AND SECONDARY GROWTH AREAS). The City's General Plan Diagram designates the site as "Residential, 6 to 10 units per acre," "Residential, 2 to 3.5 units per acre," and "Greenway" (GWY). The *General Plan* land use designations for surrounding properties include "Greenway" (GWY), "Residential, 2 to 3.5 units per acre," "Residential, 1 to 5 units per acre," and "Public Facility" (PF-I). Refer to Figure 5.1-3, EXISTING GENERAL PLAN DESIGNATIONS.

CITY OF REDDING ZONING ORDINANCE

RMC Title 18 contains the City's *Zoning Ordinance*. The broad purposes of the *Zoning Ordinance* are to implement the *General Plan* and promote and protect the public health, safety, peace, comfort, and general welfare of the City of Redding. More specifically, the *Zoning Ordinance* is intended to:

- Direct growth with a priority on those areas where infrastructure and urban services can be economically provided.
- Ensure consistency between *General Plan* land use designations and policies and zoning districts.
- Maintain and enhance the appearance and function of both new and existing development
- Provide compatibility between land uses.
- Establish standards regulating the use and physical development of land.

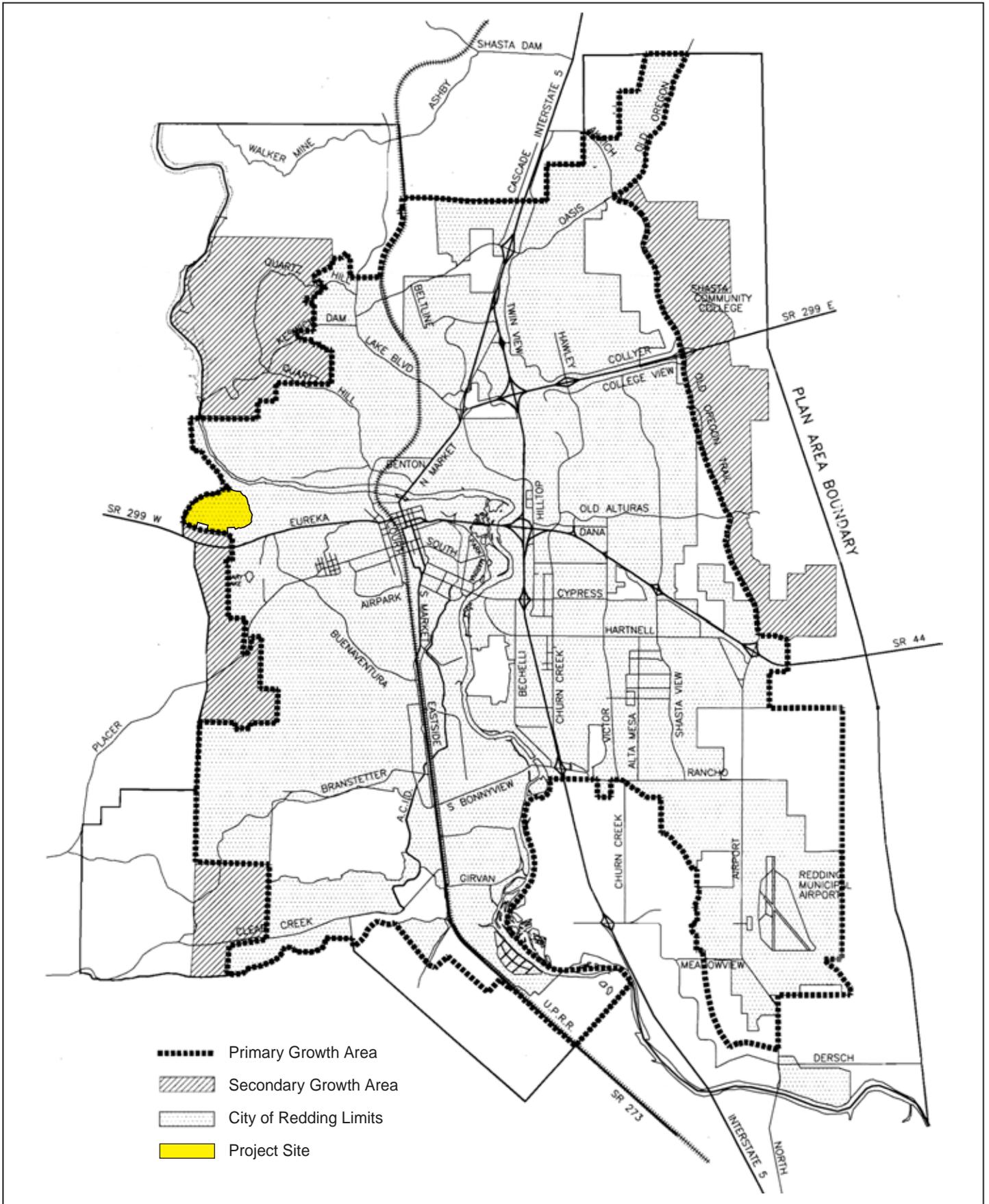
On- and Off-Site Zoning Designations

The proposed Project site is zoned "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space). Zoning designations for properties surrounding the Project site are "OS" (Open Space), "RS-2.5" (Residential Single Family), "PF" (Public Facilities), "RS-2" (Residential Single Family), and "RS-3" (Residential Single Family). Refer to Figure 5.1-4, EXISTING ZONING DESIGNATIONS. The proposed subdivision will require a rezone to apply the "PD" (Planned Development Overlay District) to the property. The "PD" (Planned Development Overlay District) will allow the Project to have the proposed variety of housing types, blending of *General Plan* densities, and flexibility in application of the City's zoning regulations.

The "PD" (Planned Development Overlay District) and the Planned Development Plan are intended to facilitate development of properties designated for residential and commercial uses and for those areas designated as mixed-use neighborhood overlay areas in the *General Plan*. This process is used where greater flexibility in design is desired to provide a more efficient use of land than would be possible through strict application of conventional zone or land use district regulations and to assist in the development of housing opportunities for lower-income families and individuals. This flexibility also facilitates excellence in project design that may not otherwise be achieved under the provisions of the base zoning districts.

TRANSPORTATION ELEMENT

The *General Plan* Transportation Element provides the necessary framework to guide the growth and development of the Planning Area's transportation-related infrastructure. This Element also integrates land use and transportation planning by ensuring that all existing and future developments have adequate circulation.



Source: City of Redding, General Plan Community Development and Design Element.

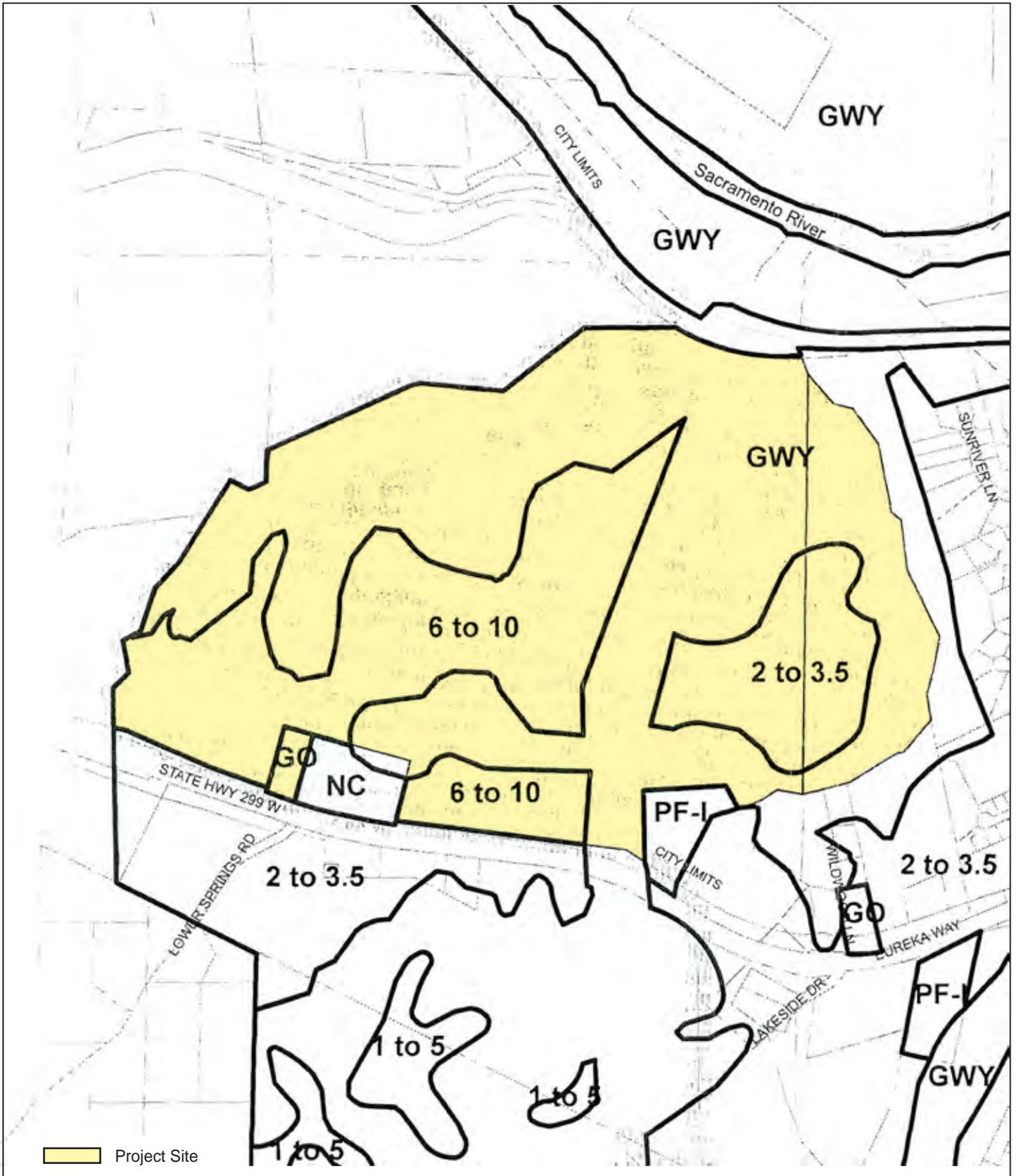
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 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • IIR

Primary and Secondary Growth Areas

Figure 5.1-2



11/19/08 JN 60-100416-15334 MAS

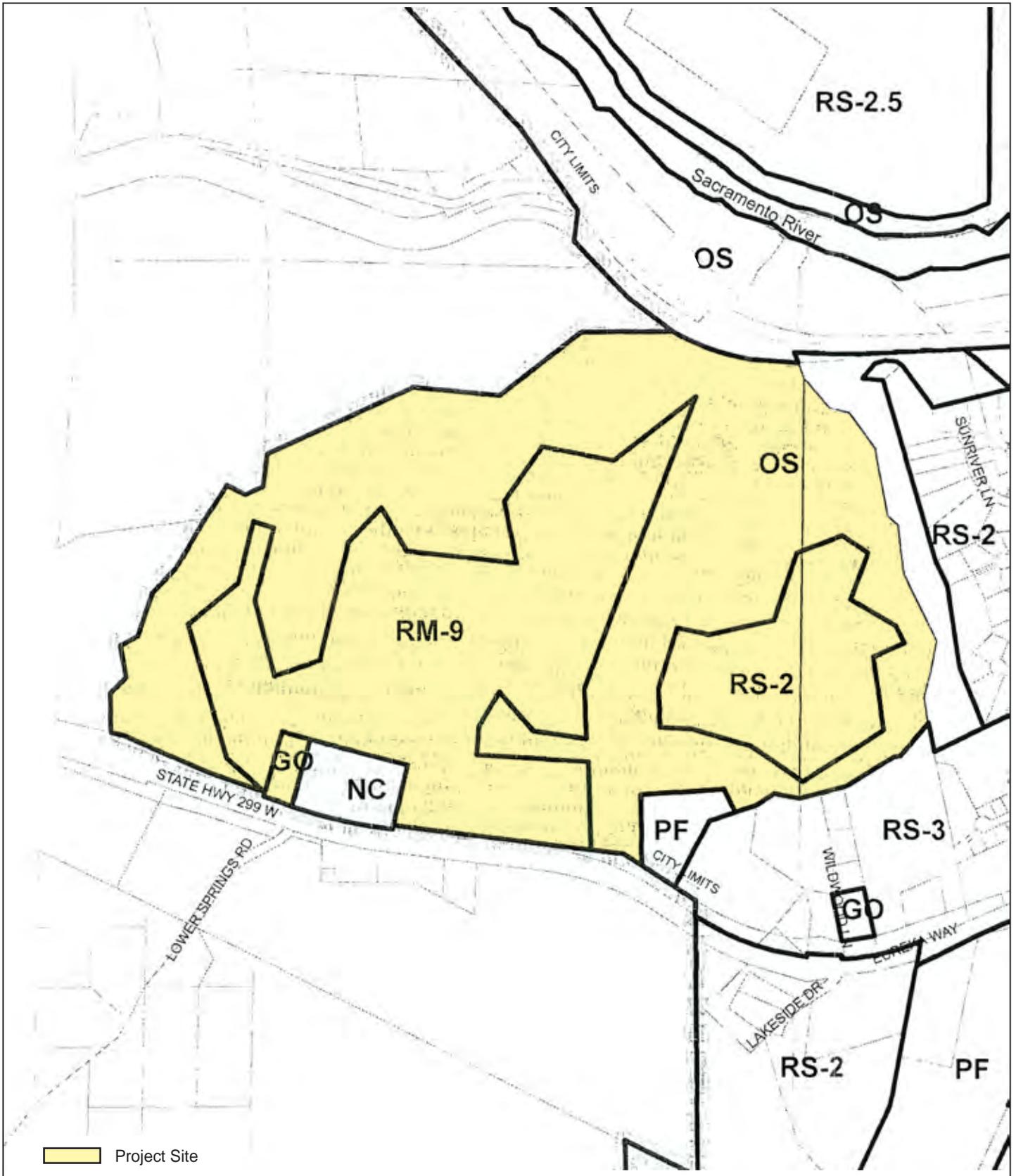


Source: City of Redding, Development Services Department,
 General Plan Map, Salt Creek Heights Subdivision, Sept. 18, 2007.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Existing General Plan Designations

Figure 5.1-3



Source: City of Redding, Development Services Department, Zoning Map, Salt Creek Heights Subdivision, Sept. 18, 2007.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Existing Zoning Designations

Figure 5.1-4



not to scale

5/1/09 JN 60-100416-15334 MAS



5.1.3 REGULATORY FRAMEWORK

LAND USE PLANNING AND CEQA

The *California Environmental Quality Act* (CEQA) establishes that a significant effect on the environment involves an adverse change to the physical environment. Pursuant to the State *CEQA Guidelines*, a project's impact related to land use planning is evaluated in terms of compatibility with existing land uses and consistency with local plans and other local land use controls (general plans, zoning codes, specific plans, etc.). For some projects, State agencies are involved in land use regulation and planning, including the California Department of Transportation (Caltrans), California Department of Forestry and Fire Protection (CDF), California Department of Conservation, California Department of Fish and Game (CDFG), and State Water Resources Control Board (SWRCB).

CITY OF REDDING

City of Redding General Plan

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects on land use and planning. Applicable goals relative to the proposed Project within these elements are listed in Table 5.1-1, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR LAND USE, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.

City of Redding Zoning Regulations

The *Zoning Ordinance* and Zoning Map of the City of Redding, found in Title 18 of the RMC, provides specific development and land use regulations for the City. The *Zoning Ordinance* is designed to implement the *General Plan* and promote and protect public health, safety, peace, comfort, and general welfare of the City of Redding.

City of Redding Tree Management Ordinance

The City of Redding's *Tree Management Ordinance* was developed based on the following objectives: "1) protect and enhance the aesthetic qualities of the community provided by native and nonnative trees; 2) promote a healthy and attractive urban landscape as the community grows; 3) recognize the importance of trees as a visual and physical buffer; 4) preserve the City's valuable natural features; 5) require the replacement of trees that are removed, where appropriate; 6) establish a program for the planting of trees in new developments; 7) protect trees on undeveloped properties until such time as a development plan/building permit is approved." In order to accomplish the preservation purposes of the *Tree Management Ordinance*, candidate trees, as defined in RMC Title 18, Chapter 18.61, in the City are afforded special protections. The regulations require that a tree removal permit be obtained for removal of trees on vacant/undeveloped lands in order to ensure that trees can be identified and considered as candidates for preservation during the development process (Ordinance 2369 §1 (part), 2006).



TABLE 5.1-1
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Community Development and Design Element</u></p> <p>Goal CDD1: Encourage urban growth to occur within the City and provide a development pattern that establishes an orderly urban service area.</p>	
<p>Policy CDD1A: Utilize the designated Primary and Secondary Growth Areas so that there is a balance among the following:</p> <ul style="list-style-type: none"> The need for future urban expansion areas. The costs associated with annexing areas that contain existing substandard development. Rural/Urban Interface conflicts. The ability of the City to provide urban services. 	<p>The proposed Project is entirely within the City's established Primary Growth Area within Redding's corporate limits and would not require annexation. Refer to Section 5.9, PUBLIC SERVICES AND UTILITIES, for a discussion of urban services.</p>
<p>Policy CDD1B: Consider annexation of additional lands if the annexation will result in:</p> <ul style="list-style-type: none"> A more logical service area boundary. The elimination of an existing County "island". A more efficient provision of urban services. A resolution of existing health and safety concerns. A neutral or positive fiscal impact to the City. <p>Consider modifications of the Primary Growth Area boundary only when the land supply for single-family housing development declines to a ten-year supply or less as determined by the City and/or when appropriate lands for industrial development are identified.</p>	<p>Not applicable to this Project.</p>
<p>Policy CDD1C: Promote orderly expansion of the City's boundaries through the approval of rezoning prior to annexation. Establish specific findings and criteria for consideration of rezoning requests within the Primary and Secondary Growth Areas.</p>	<p>Not applicable to this Project.</p>
<p>Policy CDD1D: Refer all development applications that have the potential to impact lands or facilities in the unincorporated area to Shasta County for review and comment.</p>	<p>The County of Shasta has received information regarding the proposed Project.</p>
<p>Policy CDD1E: Encourage adjacent jurisdiction to adopt development standards consistent with the City's.</p>	<p>Not applicable to this Project.</p>
<p>Policy CDD1F: Generally oppose development of community septic systems or temporary sewage disposal facilities within the Sphere of Influence.</p>	<p>The proposed Project will not use septic systems or temporary sewage disposal facilities.</p>



TABLE 5.1-1 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy CDD1G:</i> Require annexation before services are provided by the City, except under extraordinary circumstances.</p>	Not applicable to this Project.
<p><i>Policy CDD1H:</i> Support the creation of new, or the expansion of existing, special districts within the City's Sphere of Influence only where service agreements already exist.</p>	Not applicable to this Project.
<p><i>Policy CDD1J:</i> Work with Shasta County to develop and implement a planning strategy that will permit the orderly urbanization of key areas within the Stillwater Basin and the Quartz Hill Specific Plan Area. The strategy should include emphasis on determining: The distribution and design of future arterial and collector streets. Logical extension of utilities such as water and sewer. Drainage facilities. Residential lot configurations that will accommodate future resubdivision.</p>	Not applicable to this Project.
<p><i>Goal CDD2:</i> Ensure the ability of the City, school districts, and other public-service providers to efficiently provide expected and necessary public facilities and services to their constituents.</p>	The development of the proposed Project will be coordinated with infrastructure improvements. In addition, the proposed Project will contribute fair share funding for public services. Refer to Section 5.4, TRAFFIC AND CIRCULATION.
<p><i>Policy CDD2B:</i> Ensure that new development will not degrade public services below established service levels, that it contributes to the enhancement of services as appropriate, and that the costs of providing services do not exceed anticipated revenue from the development of the project over the long term.</p>	Public service agencies have been contacted to identify required services to accommodate the proposed Project area (refer to Section 5.9, PUBLIC SERVICES AND UTILITIES). The proposed Project would also contribute toward infrastructure improvements as necessary.
<p><i>Policy CDD2C:</i> Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to receiving approval of a final subdivision map, or, in the absence of the need for a final subdivision map, prior to receiving approval of any required building permits.</p>	Refer to Policy CDD2B consistency discussion, above.



TABLE 5.1-1 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy CDD2D:</i> Work with school districts in the Planning Area on a continuous basis to determine appropriate sites for new schools; assist Districts by reserving sites as a condition of development approval in accordance with applicable State law.</p>	<p>The proposed Project will not require the construction of a new school facility. In accordance with California Government Code §65995(h) and §65996(b), existing fee mechanisms would fully mitigate the financial effects of the student population associated with the proposed Project.</p>
<p><i>Policy CDD2E:</i> Maintain adequate capacity for urban growth by continuously monitoring and, when required, increasing the capacity of the City's water, sewer, storm drainage, electric, and solid waste disposal systems.</p>	<p>Public service agencies have been contacted to identify required services to accommodate the proposed Project area (refer to Section 5.9, PUBLIC SERVICES AND UTILITIES). The proposed Project would also contribute toward infrastructure improvements as necessary.</p>
<p><i>Policy CDD2F:</i> Classify City-owned property in Southwest Oregon Gulch as "PF/I" to reserve it for a future landfill site or other appropriate public use.</p>	<p>Not applicable to this Project.</p>
<p><i>Goal CDD3:</i> Ensure a proper balance between development areas and the natural environment.</p>	
<p><i>Policy CDD3A:</i> Prohibit development in natural floodplains or on hillsides with slope areas exceeding 20 percent. Minor encroachments into these areas for new developments may be authorized without a General Plan amendment if necessary to facilitate installation of infrastructure, or otherwise provide emergency-access opportunities, or otherwise facilitate construction of the project as approved by the City. (See Policy NR10A.) Where an entire site designated for residential use is subject to flooding or has slopes over 20 percent, a density of 1.0 dwelling unit per 20 acres may be permitted by use permit subject to appropriate standards.</p>	<p>The Project is not located within a natural floodplain or flood zone. Project development will largely avoid grading within areas equal to or greater than 20 percent slopes. However, grading necessary to provide appropriate access to many of the out parcels, would require grading within slope areas greater than 20 percent protected by <i>General Plan Policy CDD3A</i>. MM 5.1-2 would require the Project Applicant to redesign the subdivision or eliminate those out parcels inconsistent with the policy as determined by the approving body of the Project.</p>
<p><i>Policy CDD3B:</i> Require buffer areas between development projects and significant watercourses, riparian vegetation, and wetlands in accordance with the Natural Resources Element.</p>	<p>Per the RMC, setbacks from Salt Creek, Gold Run Creek, and the Sacramento River would ensure a proper relationship between these water features and the proposed development.</p>
<p><i>Policy CDD3C:</i> Preserve natural corridors and linkages between habitat types through project design, key open space acquisitions, floodplain and slope dedications and easements, and similar mechanisms.</p>	<p>Approximately 142.8 acres will be designated "Greenway" (GWY). "Greenway" (GWY) is described in the <i>General Plan</i> as natural open space including "slopes in excess of 20 percent and the 100-year floodplain of the Sacramento River and its tributary creeks and streams." In addition, several parcels surrounding the proposed Project are designated as Greenway. The proposed Project is in compliance with RMC Title 18, Chapter 18.48 (River/Creek Corridor Development) regarding the provision of adequate buffer areas between creek corridors and adjacent development. Compliance with RMC requirements and <i>General Plan</i> policies would reduce potential impacts.</p>



TABLE 5.1-1 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p>Goal CDD4: Protect and enhance the relationship between the City and the Sacramento River</p> <p>Policy CDD4A: Preserve significant trees and other vegetation along the banks of the Sacramento River, while emphasizing passive recreation and providing opportunities for active uses.</p>	<p>The proposed Project has been designed to avoid impacts to the Sacramento River and its banks. The Project would provide a connection to the Sacramento River Trail via the on-site connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension. In addition, a Development Agreement between the Project Applicant and the City for developer construction of the proposed neighborhood park in conjunction with the subdivision in exchange for credits towards the Project's city-wide park development impact fee obligation.</p>
<p>Policy CDD4B: Continue acquisition of key lands along the river and other area waterways to provide passive, nonmotorized public access and to preserve important ecological values and sensitive habitats. This may be accomplished by a combination of public and private land purchases, donations, dedications, granting of public easements, the use of life estates, and similar mechanisms.</p>	<p>Not applicable to this Project.</p>
<p>Policy CDD4C: Continue to develop active and passive public-use facilities and trails along portions of the riverfront as generally depicted on Figure 1-2. Expand public-use areas and pedestrian and bicycle trails as additional lands are made available, while limiting impacts to existing wildlife habitat and developed properties.</p>	<p>The proposed Project has been designed to avoid impacts to the Salt Creek corridor and will provide a connection to the Buenaventura Trail.</p>
<p>Policy CDD4D: Establish public open space and pedestrian/bicycle links between the river and parks, activity centers, schools, and other major open space areas such as stream corridors.</p>	<p>The proposed Project will include land dedication for trails through the open space areas.</p>
<p>Policy CDD4E: Give priority to the expansion of existing vehicle bridges over the construction of additional bridges. If new bridges are constructed, they should be designed to complement their surroundings and views of the structure from the river and trails.</p>	<p>No new bridges are required as part of the development. However, the extension of Buenaventura Boulevard on-site will require a bottomless/conspan culvert design to cross Gold Run Creek. Views of this crossing would be minimal from the Buenaventura Trail.</p>
<p>Policy CDD4F: Design open space access ways to complement existing development, and, where applicable, protect the privacy of adjoining residences.</p>	<p>Approximately 142.8 acres will be designated "Greenway" (GWY). "Greenway" (GWY) described in the <i>General Plan</i> as natural open space including slopes in excess of 20 percent and the 100-year floodplain of the Sacramento River and its tributary creeks and streams.</p>



TABLE 5.1-1 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p>Goal CDD5: Ensure a proper relationship between stream corridors and urban development.</p> <p>Policy CDD5A: Establish appropriate development standards along those stream corridors depicted in Figure 1-3 in order to:</p> <p>Promote the aesthetic value of the adjacent natural area.</p> <p>Provide public views and access to the stream corridor.</p> <p>Protect the privacy and security of adjacent residences.</p>	<p>Salt Creek, located along the western boundary of the Project site, is identified as a primary stream corridor in Figure 1-3 of the <i>General Plan</i>. Per the RMC, setbacks from Salt Creek would ensure that proposed development would preserve the aesthetic value of the adjacent natural area as well as allow for public views toward Salt Creek from the Project site.</p>
<p>Goal CDD7: Retain the natural appearance of steep hillside areas and designated ridge lines.</p> <p>Policy CDD7A: Protect the visual integrity of prominent ridge lines that can be viewed from key public gathering areas, the river, visitor destinations, and community gateways. Utilize one or more of the following measures to avoid or minimize development impacts:</p> <p>Public or private purchase of lands, the use of conservation easements, or similar measures.</p> <p>Performance standards, including limitations on building heights and/or increased ridge-line setbacks and standards for use of appropriate building forms, colors, and materials that blend into their surroundings.</p> <p>Policy CDD7B: Establish hillside development standards to: (1) decrease allowable residential densities as the slope of the site increases; (2) limit site grading on slopes; (3) require use of multiple levels so buildings are set into the hill; and (4) minimize disturbance of native trees and other vegetation outside of the building, yard, and other driveway areas, while providing appropriate levels of wildland fire protection. Require revegetation of disturbed areas.</p>	<p>The proposed subdivision would provide landscaping in accordance with City standards to minimize the visible changes in topographic conditions (i.e., manufactured slopes) and on-site structures. The proposed Project is not located on a prominent ridgetop, as identified in the <i>General Plan</i>. However, one prominent ridgetop area, as defined by the <i>General Plan</i>, is located to the north of the Sacramento River and has views to the Project site. As approximately 142.8 acres of open space is proposed, the majority of background views toward heavy vegetation and visible hillsides at the Project site would remain. Refer to Section 5.3, AESTHETICS, LIGHT, AND GLARE.</p> <p>RMC Title 18, §18.01.20 of the <i>Zoning Ordinance</i> and RMC Title 17, §17.54.260 address development standards for hillside areas, which the Project would adhere to. The proposed densities would be consistent with the current land use designations for the Project site. MM 5.1-2, below, would reduce grading on slopes to less than significant levels.</p>
<p>Goal CDD8: Promote the development of a cohesive, well-defined City.</p> <p>Policy CDD8A: Maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features.</p>	<p>The Project is bordered by Salt Creek to the west, Gold Run Creek to the east, and the Sacramento River to the north. The Project would be required to implement appropriate setbacks, per the RMC, which would ensure a proper relationship between the existing open space and water features with the proposed development.</p>



TABLE 5.1-1 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Land Use

General Plan Goals, Policies, and Objectives	Analysis
<p>Goal CDD11: Ensure that new residential development is well-located and well-designed and can accommodate a mixture of housing types and uses.</p> <p>Policy CDD11D: Allow residential developments to include a mix of densities and dwelling types, provided that the proposed development is in scale with the neighborhood and that the total dwelling unit count is consistent with the applicable General Plan density range depicted on the General Plan Diagram.</p> <p><u>Natural Resources Element</u></p> <p>Goal NR10: Preserve areas containing excessive slopes or 100-year floodplains as open space to prevent loss of life and property damage and to provide valuable habitat and recreational opportunities.</p> <p>Policy NR10C: Require, as a condition of development approval, that private open-space easements be established for significant areas of nondeveloped lands that exceed a slope of 20 percent. Use public dedications and/or trail easements when necessary to connect these areas to existing or proposed public open space.</p>	<p>The proposed development is located within the City's Primary Growth Area. A range of residential uses (i.e., single- and multi-family housing, and custom homes) are proposed.</p>
<p>Source: <i>City of Redding General Plan</i>, October 2000.</p>	<p>The Project proposes 13.9 acres of land for the development of a neighborhood park. There are approximately 127.4 acres of land with slopes 20 percent are included in the open space areas. The Project would provide a connection to the Sacramento River Trail via the on-site connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension.</p>



City of Redding Grading Ordinance

The City of Redding *Grading Ordinance* requires the application of “Best Management Practices” (BMPs) in accordance with the City Erosion and Sediment Control Standards Design Manual (RMC Title 16, Chapter 16.12, §16.12.060, Subsection C, D, E). In practice, specific erosion-control measures are determined upon review of the final subdivision grading plan and are tailored to project-specific grading impacts.

5.1.4 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Appendix G of the State *CEQA Guidelines* contains the Initial Study Environmental Checklist form which includes questions relating to land use and relevant planning. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Physically divide an established community (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT).

Notwithstanding the significance criteria stated above, it should be noted that the mere fact that a project might be inconsistent in some manner with particular policies in a general plan or zoning ordinance does not per se amount to a significant environmental effect. In the context of land use and relevant planning, significant impacts occur when a conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project results in an adverse physical environmental impact.

5.1.5 IMPACTS

Land use and relevant planning impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.1-1 PROJECT CONSTRUCTION ACTIVITIES MAY TEMPORARILY RESULT IN INCREASED AMOUNTS OF LOCAL AIRBORNE AND PARTICULATE MATTER, AS WELL AS AN INCREASE IN TRAFFIC CONGESTION, NOISE LEVELS, AND VISUAL IMPACTS.

Impact Analysis: Dust generation due to typical construction and grading activities can be anticipated to temporarily increase local airborne and particulate matter. However, construction-related dust is more of a nuisance than a serious health threat, and would be offset through standard construction practices (refer to Section 5.6, AIR QUALITY). Construction equipment and staging areas may be unsightly for adjacent



residents and motorists, although vehicle staging and materials stockpiling will be removed as far as practicable from adjacent residences. Construction activities will also temporarily increase noise due to on-site construction activities. However, these impacts would be short-term in nature and are not expected to continue after build-out of the proposed Project. In addition, prior to construction, the Project Applicant or contractor will be required to submit a construction Traffic Management Plan (TMP), which will include restrictions on routes for construction traffic, as well as construction traffic safety measures. Specific impact discussion and mitigation related to air quality, noise, and traffic interruption are discussed in the appropriate sections of this EIR.

Mitigation Measures:

MM 5.1-1 Implement mitigation measures in Section 5.3, AESTHETICS, LIGHT AND GLARE, and Section 5.6, AIR QUALITY.

Level of Significance: Less than significant impact with mitigation incorporated.

CONSISTENCY WITH GENERAL PLAN

5.1-2 IMPLEMENTATION OF THE PROPOSED PROJECT COULD POTENTIALLY CONFLICT WITH SOME OF THE APPLICABLE GOALS AND POLICIES OF THE GENERAL PLAN.

Impact Analysis: Land use compatibility is a function of how well a project is integrated with surrounding adjacent land uses. Land use compatibility impacts can be measured in terms of specific environmental effects such as noise, air quality, visual resources, and traffic. The land use compatibility analysis is therefore supported by other specific discussions within this EIR. The proposed Project is consistent with the *General Plan* land use designations for the site and is located in an area designated for community development. All development proposed in the City is reviewed for consistency with land use controls and development standards during the course of the project review and approval process. Development of the proposed Project shall require consultation and acquisition of required permits and approvals by responsible and trustee agencies that have jurisdiction over the Project site.

While the implementation of the Project would result in the development of property currently vacant and undeveloped, it would set aside over 142.8 acres as permanent open space within the Project area. However, the natural setting of the area would be changed as a result of the implementation of the proposed Project. This change from an undeveloped character to a developed suburban character for this site is planned for and supported by the *General Plan*, and has been previously analyzed in the *General Plan EIR*.

CEQA requires a project be evaluated for consistency with applicable plans that have been implemented to protect the environment. The City of Redding's *General Plan* is one such plan that includes policies for the protection of various environmental resources of the City. Conflicts with applicable policies that result in adverse physical impacts may be considered significant impacts under CEQA.

Table 5.1-1, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR LAND USE, assesses the proposed Project's relationship to pertinent goals and policies of the City's *General Plan*. The following provides a discussion and analysis for only those instances where the proposed Project could conflict with *General Plan* policies and the conflict has the potential to result in adverse physical impacts.



Potential Conflicts with *General Plan* Policy CDD3A

The topography of the Project site contains areas where slopes exceed 20 percent. These slope areas are defined as “Greenway” (GWY), and the *General Plan* indicates that they should be altered only in limited circumstances. The *General Plan* allows encroachment into “Greenway” areas “..... as necessary to facilitate installation of infrastructure, provide emergency-access opportunities, or otherwise facilitate construction of the project as approved by the City” (Policy CDD3A). This suggests that certain flexibility is inherent in project design, approval, and construction. However, it is also clear that a “Greenway” “. . . should not be urbanized or significantly altered” (“Greenway” land use classification definition).

The majority of grading for the Project is within the gently sloped terrace areas in the higher elevations of the site. Approximately one-third of the total Project area would be graded for building sites, including approximately 690,000 cubic yards (CY) of cut and approximately 600,000 CY of fill which would be balanced on-site (refer to Table 3-2, EARTHWORK VOLUME SUMMARY). The Project as proposed would largely avoid grading within areas equal to or greater than 20 percent slopes. However, grading necessary to provide appropriate access to many of the proposed Out Parcels, as identified in Figure 3-4a, SUBDIVISION TENTATIVE MAP, would require grading within slope areas greater than 20 percent protected by Policy CDD3A. Therefore, the Project as currently designed is in conflict with Policy CDD3A and would result in a potentially significant physical impact. In accordance with Planning Commission Interpretation Policy 2001-3, “no lot shall be created whose land area is totally encumbered by slopes of more than 20 percent except when approved by the Planning Commission pursuant to Chapters 17.04, *General Provisions*, and 17.44, *Modifications of Provisions*, of the Subdivision Ordinance.”

MM 5.1-2, below, would require the Project Applicant to redesign the subdivision or eliminate those Out Parcels that require grading within the slope protection areas established by *General Plan* Policy CDD3A unless otherwise approved for development in accordance with Planning Commission Interpretation Policy 2001-3. The elimination of all or a certain number of Out Parcels would reduce the area of clearing/grading on slope areas in proximity to Salt Creek and Gold Run Creek. With implementation of MM 5.1-2, the proposed Project would be in conformance with *General Plan* Policy CDD3A, resulting in a less than significant impact.

Mitigation Measures:

MM 5.1-2 Grading within on-site slope areas that exceed 20 percent should be avoided in accordance with *General Plan* Policy CDD3A unless otherwise approved through Planning Commission Interpretation Policy 2001-3. The Final Subdivision Map shall be revised to redesign or eliminate those parcels that fail to meet the objectives of *General Plan* Policy CDD3A as determined by the approving body for the proposed Project.

Level of Significance: Less than significant impact with mitigation incorporated.

CONSISTENCY WITH ZONING ORDINANCE

5.1-3 THE PROJECT PROPOSES TO CHANGE THE CURRENT ZONING DESIGNATION, THEREBY ADDING THE PLANNED DEVELOPMENT OVERLAY DISTRICT TO THE SITE.



Impact Analysis: Land uses adjacent to the proposed Project site include undeveloped land and the City of Redding's Sacramento River Trail to the north; single-family residential development and undeveloped land to the east; residential units, the Old Millhouse Deli, the City of Redding Electric Substation, and Eureka Way (SR-299) to the south; and residential units and undeveloped land to the west. These uses have the benefit of being located adjacent to undeveloped open space. In addition, Salt Creek is a natural barrier along the western and northern boundaries of the proposed Project and Gold Run Creek forms the eastern Project boundary.

Under the City's *Zoning Ordinance*, the proposed Project is zoned "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space), and is designated "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", and "Greenway" (GWY) in the *General Plan*. The proposed Project would require a rezone to apply the "PD" (Planned Development Overlay District) to the existing "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space) designations. The "PD" (Planned Development Overlay District) would allow the Project to have the proposed variety of housing types, blending of *General Plan* densities, and flexibility in application of the City's zoning regulations. Development within the "PD" (Planned Development Overlay District) shall be consistent with any adopted area plans, density provisions of the *General Plan* land use designation and base zoning district, and must be compatible with surrounding land uses. In addition, the proposed Project would be required to comply with RMC Title 18, which is designed to ensure land use compatibility and orderly development. Regulations for setbacks, density, allowed land use, and other elements of development projects serve to reduce incapability that might otherwise accompany unplanned development.

Although the proposed Project would alter current conditions on the site, the proposed subdivision would be compatible in density and character with the existing subdivision to the east. In addition, the existing subdivision located to the east of the proposed Project shares the same *General Plan* land use and zoning designations ("Residential, 2 to 3.5 units per acre" and zoning designation of "RS-2"). The proposed rezone would not change the character of the area or the site originally intended in the *General Plan*. Compatibility impacts would be mitigated with the implementation of sensitive design features, including appropriate setbacks, edge treatment concepts, and property line transitional elements would serve to minimize impacts to adjacent uses. In addition, potential compatibility impacts would be mitigated to less than significant levels with adherence to applicable design standards set forth in RMC Title 18 and with implementation of required mitigation measures identified throughout this EIR document. No significant impact has been identified.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

CUMULATIVE IMPACTS

5.1-4 **THE PROPOSED PROJECT, COMBINED WITH OTHER FUTURE DEVELOPMENT, WOULD NOT INCREASE THE INTENSITY OF LAND USES IN THE AREA.**

Impact Analysis: The area influenced by cumulative land use effects related to adjacent parcels and the surrounding planned development areas is described in Section 4.0, BASIS OF CUMULATIVE ANALYSIS. Related land use projects in the surrounding areas have been: (1) submitted for plan processing; (2) approved by the City of Redding; and/or (3) engaged in active construction programs. While



the surrounding area is not at buildout, and as yet is relatively rural in nature, the proposed Project would contribute to a cumulative influence on land uses in and around the Project area.

The anticipated Project impacts, in conjunction with cumulative development in the site vicinity, would increase urbanization and result in the loss of existing open space in the local vicinity. Potential land use impacts are site-specific and require evaluation on a case-by-case basis. This is true with regard to land use compatibility impacts, which are generally a function of the relationship between the interactive effects of a specific development site and those of its immediate environment. In that development within the Central and West Redding Planning Area is anticipated to occur in accordance with the *General Plan* and attendant zoning classifications and has been evaluated in the corresponding *General Plan EIR*, potential cumulative effects upon land use and planning are not anticipated to be significant.

The City of Redding recognized that buildout of the *General Plan* land uses would result in the permanent conversion of vacant undeveloped areas to urban, suburban, and open space uses resulting in a change in the community character. The proposed Project is in accordance with the land uses identified in the *General Plan*. The *General Plan* established a number of policies to reduce impacts as a result of land use changes. These policies (CDD 1A, -1B, -1C, -1D, -1E, -1I, -1J, --3B, -4F, -5A, -7A, -8A, -9B, -9C, -9D, -10A, -11B, -11H, -13B, 1-3C, 14A, MN-1, MN-3, T-5A, N-2C, -2F, -3A, -3B, ad -3D) were determined in the *General Plan EIR* to reduce any conflicts with adjacent land use or the intensity of existing land use patterns to a less than significant level. As the proposed Project is in concurrence and consistent with the land uses identified in the *General Plan* and all *General Plan* land use impacts were reduced through policies established by the City to a less than significant level, the cumulative land use impacts caused as a result of the implementation of the proposed Project would also be considered less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



5.2 PUBLIC HEALTH AND SAFETY

The purpose of this section is to identify, to the extent feasible, the potential for hazards associated with historic and current site uses, surrounding sites, and recognized environmental conditions in connection with the proposed Project site and to identify potential risks to human health, including future residents, uses of the proposed Project site, workers, and construction workers. This section is based on the Phase I Environmental Site Assessment (ESA), dated May 2006 (refer to Appendix 15.2, HAZARDOUS MATERIAL EVALUATION).

5.2.1 DEFINITION OF TERMS

The United States Environmental Protection Agency (U.S. EPA) and the California Department of Toxic Substance Control (DTSC) have developed and continue to update lists of hazardous wastes subject to regulation. Regulation of hazardous waste is provided on both the State and Federal levels.

The term "hazardous material" refers to both hazardous substances and hazardous waste. A material is defined as "hazardous" if it appears on a list of hazardous materials prepared by a Federal, State, or local regulatory agency or if it has characteristics defined as hazardous by such an agency. A "hazardous waste" is a solid waste that exhibits toxic or hazardous characteristics, specifically ignitability, corrosivity, reactivity, and toxicity. The U.S. EPA has defined the term "solid waste" to include many types of discarded materials, including any gaseous, liquid, semiliquid, or solid material that is discarded or has served its intended purpose, unless the material is specifically excluded from regulation. Such materials are considered waste whether they are discarded, reused, recycled, or reclaimed.

The term "recognized environmental condition" (REC) is the presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous or nonhazardous substances that are designated wastes or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. Furthermore, the term includes hazardous substances or petroleum products even under conditions in compliance with rules, regulations, and/or law.

Public health is potentially at risk whenever hazardous materials are, or will be used. It is necessary to differentiate between the "hazard" of these materials and the acceptability of the "risk" they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure, in addition to the inherent toxicity of a material. Factors that can influence the health effects of exposure to hazardous materials include: the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

5.2.2 TRANSPORTATION OF HAZARDOUS MATERIALS

Transportation of hazardous materials and wastes is regulated by California Code of Regulations (CCR) Title 26. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) enforce Federal and State regulations and respond to hazardous materials transportation emergencies. Emergency responses are coordinated as necessary between Federal, State, and local governmental



authorities and private persons through a State-mandated Emergency Response Plan. Because of the significant short-term risks to public health and the environment associated with hazardous waste management during transportation of wastes, specific Commercial Hazardous Waste Shipping Routes are designated to minimize the distance that wastes are transported and their proximity to vulnerable locations.

Major interstate transportation routes that pass through the City of Redding are areas of concern in regards to the transportation of hazardous materials. Eureka Way (SR-299) is considered an area of concern in the City of Redding, due to the relatively high traffic volumes. The City is exposed to the effects of a major catastrophic hazardous material emergency due to the proximity of this transportation route (and others) to densely populated areas of the City. However, when properly contained, these materials present no hazard to the community. Although standard accident and hazardous materials recovery procedures are enforced by the state and followed by private transportation companies, the City of Redding is at relatively high risk because of its location along interstate, rail and highway corridors.

5.2.3 EXISTING CONDITIONS

Historic land uses for the proposed Project consisted primarily of gold mining activities, in addition to utility and transportation development.

ON-SITE

The proposed Project consists of approximately 272.9 acres of undeveloped land located immediately north of Eureka Way (SR-299), in the vicinity of Lower Springs Road. The proposed Project is located in an area comprised of undeveloped land, residences, and commercial buildings. The proposed Project site ranges in elevation from approximately 500 to 760 feet above sea level. The site consists of a relatively flat ridge top that drops sharply to the north and east, and gradually towards the southeast. No wells were observed on the property. Information regarding depth to groundwater was not available for the property or vicinity (EDR Inquiry Number 1671051.2s). In the absence of reported groundwater flow direction information, it is assumed that groundwater follows surface topography and flows towards the north, east, and southeast. Salt Creek is located along the northern and western Project boundaries. Gold Run Creek is located along the eastern and southern portions of the proposed Project.

OFF-SITE

The area surrounding the proposed Project is comprised of undeveloped land, residences, and commercial buildings. The parcels immediately adjoining the proposed Project are as follows:

- Adjacent to the north of the proposed Project is undeveloped land and the City of Redding's Sacramento River Trail.
- Adjacent to the south of the proposed Project are residences, the Old Millhouse Deli, a City of Redding Electric Substation (4400 Eureka Way), and Eureka Way (SR-299). Undeveloped land and residences are located to the south of Eureka Way (SR-299).
- Adjacent to the west of the proposed Project are rural residences and undeveloped land.
- Adjacent to the east of the proposed Project are residences and undeveloped land.



5.2.4 METHODOLOGY

Hazardous materials and the generation of hazardous waste raises an environmental concern when altering, changing, or developing land uses. Hazardous materials can take the form of petroleum products (including oil and gasoline), vehicular fluids, paint, solvents, cleaning fluids, and pesticides. By-products generated as a result of activities using hazardous materials (such as dry cleaning solvents, oil, and gasoline) are considered to be hazardous waste. Commercial uses, especially those with underground storage tanks, are most suspect for contamination of soils and groundwater. With remediation techniques and strict guidelines currently in practice, soil contamination (unlike groundwater contamination) typically does not pose a serious health risk.

The objective of consulting historical sources is to develop a history of the previous uses or occupancies of the property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions in connection with the property. In addition, interviews were conducted on May 16th and May 23, 2006, in order to get more information regarding the proposed Project site.

HISTORIC MAP REVIEW

In an attempt to assess past property uses that may have had an environmental impact on the proposed Project and/or surrounding areas, select historical maps depicting the proposed Project site and surrounding areas were reviewed. Topographic maps from 1894, 1913, 1944, 1957, and 1969 were available for review.

- 1984 - (USGS 60-minute Red Bluff, California, Quadrangle): The property consists of undeveloped land. Railroad tracks and undeveloped land adjoin the property to the north, followed by the Sacramento River. A road and undeveloped land adjoin the property to the south. Salt Creek is located along the western property boundary, followed by undeveloped land. Undeveloped land adjoins the property to the east.
- 1913 - (USGS 30-minute Redding, California, Quadrangle): Three buildings, likely residences, are located in the northern portion of the property. The remainder of the property is undeveloped. Intermittent streams are located on the western and eastern portions of the property. Railroad tracks and undeveloped land adjoin the property to the north, followed by the Sacramento River. A road and undeveloped land adjoin the property to the south, followed by undeveloped land and a building. Salt Creek is located along the northwestern property boundary, followed by undeveloped land. Undeveloped land adjoins the property to the east and southwest.
- 1944 - (USGS 15-minute Redding, California, Quadrangle): The entire property consists of undeveloped land. The previously observed three buildings are no longer located on the property. Salt Creek, undeveloped land, and railroad tracks adjoin the property to the north. Eureka Way (SR-299), buildings, and undeveloped land adjoin the property to the south. Salt Creek and undeveloped land adjoin the property to the west. Undeveloped land adjoins the property to the east.
- 1957 - (USGS 7.5-minute Redding, California, Quadrangle): The property remains undeveloped. Power lines cross the central portion of the property. Salt Creek, undeveloped land, and railroad tracks adjoin the property to the north. Eureka Way (SR-299), buildings, and undeveloped land adjoin the property



to the south. Salt Creek and undeveloped land adjoin the property to the west. Undeveloped land adjoins the property to the east.

- 1969 - (USGS 7.5-minute Redding California, Quadrangle): One building, likely a residence, is located on the southern portion of the property. The remainder of the property consists of undeveloped land. Power lines remain located on the central portion of the property. Salt Creek, undeveloped land, and railroad tracks adjoin the property to the north. Eureka Way (SR-299), buildings, and undeveloped land adjoin the property to the south. Salt Creek and undeveloped land adjoin the property to the west. Undeveloped land adjoins the property to the east.

No obvious recognized environmental conditions for the proposed Project site or adjacent parcels were noted from the topographic maps reviewed.

RECORDS REVIEW

- Local Fire Department Records Review: Available records for the proposed Project were reviewed at the City of Redding Fire Department on May 16, 2006. No hazardous materials incident reports were on file for the proposed Project site.
- Local Health Department Records Review: Records were reviewed at the Shasta County Environmental Health Department on May 16, 2006. No files were found for the proposed Project site.
- Local Building Department Records Review: The proposed Project consists of undeveloped land; therefore, no building department records are available for the property.

AERIAL PHOTOGRAPH REVIEW

Select historical aerial photographs depicting the proposed Project and surrounding areas were reviewed. Aerial photographs from 1952, 1974, 1985, 1993, 1998, 2002, and 2004 were available for review.

- 1952 (Robinson): The property consists of undeveloped land that is densely vegetated with trees and shrubs. Power lines and unimproved dirt roads traverse the property. Salt Creek is located along the northern and western property boundaries. Railroad tracks and undeveloped land adjoin the property to the north. Undeveloped land, residences, and State Route 299 adjoin the property to the south. Undeveloped land adjoins the property to the west and east.
- 1974 (NASA): The property and adjoining parcels appear similar to the previous photograph.
- 1985 (CH2M HILL, RDD 85, Sheet 4-12): The property remains undeveloped land that is densely vegetated with trees and shrubs. Power lines and unimproved dirt roads traverse the property. Salt Creek is located along the northern and western property boundaries. Railroad tracks and undeveloped land adjoin the property to the north. Undeveloped land, residences, and State Route 299 adjoin the property to the south. Undeveloped land adjoins the property to the west. Undeveloped land and graded residential developments adjoin the property to the east.
- 1993 (USGS): The property and adjoining parcels to the north, south, and west appear similar to the previous photograph. Residences and undeveloped land adjoin the property to the east. An electric substation adjoins the property to the southeast.



- 1998 (USGS): The property and adjoining parcels appear similar to the previous photograph.
- 2002 (ENPLAN Aerial Photo Print): The property and adjoining parcels appear similar to the previous photograph.
- 2004 (ENPLAN Aerial Photo Print): The property remains undeveloped land that is densely vegetated with trees and shrubs. Power lines and unimproved dirt roads traverse the property. Salt Creek is located along the northern and western property boundaries. Railroad tracks and undeveloped land adjoin the property to the north. Undeveloped land, residences, an electric substation, and Eureka Way (SR-299) adjoin the property to the south. Undeveloped land and residents adjoin the property to the west and east.

No obvious recognized environmental conditions for the property or adjacent parcels were noted from the aerial photographs reviewed.

ADDITIONAL MAP REVIEW

- Munger Oil and Gas Map Review: Locations of oil and gas wells were reviewed in the Munger Map Book of California and Alaska Oil and Gas Fields. No oil or gas wells have been drilled on or adjacent to the proposed Project.
- Sanborn Fire Insurance Map Review: Sanborn Maps contain detailed drawings that indicate the location and use of structures on a given property during specific years. These maps were originally produced to show buildings in sufficient detail for insurance underwriters to evaluate fire risks and establish premiums, but now are utilized as a valuable source of historical and environmental risk information. Although Sanborn coverage was listed for the City of Redding (1885-1950), no Sanborn Maps were published for the proposed Project site.

REGULATORY AGENCY DATABASE REVIEW

To determine reported areas of possible environmental impairment on or in the vicinity of the proposed Project, 65 federal, state, local, tribal, and proprietary records databases were reviewed. Environmental Data Resources, Inc. (EDR) was utilized as an information source for environmental records. In addition, EDR was used as a source for finding information on environmental cleanup liens. No environmental liens were identified for the proposed Project. A summary of the records review can be found in Appendix 15.2, HAZARDOUS MATERIAL EVALUATION.

The proposed Project and adjoining parcels were not identified as hazardous materials use, storage, disposal, or release sites on any of the 65 databases reviewed. Institutional controls and engineering controls were not identified for the proposed Project site. In addition, no hazardous materials use, storage, disposal, or release sites were identified within a one-mile radius of the proposed Project. No obvious potential off-site sources of contamination were identified within the ASTM-specified search distance (up to one mile) of the proposed Project on the 65 databases reviewed for the Phase I Assessment.

SITE RECONNAISSANCE

A field reconnaissance of the proposed Project site was conducted on May 13, 2006. The proposed Project site was visually and/or physically observed from unimproved dirt roads that traverse the property. No



buildings or paved roads were observed on the property. Minor amounts of household and automotive trash and debris, including clothing and automobile tires, were observed along the unimproved dirt roads. This type of illegal dumping of trash and debris is typical on undeveloped lands, and is not considered a recognized environmental condition for the property. Although used tires are not considered hazardous waste, their disposal is regulated.

No regulated quantities of hazardous materials, including 55-gallon drums of chemicals, aboveground storage tanks (ASTs), or underground storage tanks (USTs) were observed to be used, stored, or disposed of on the proposed Project site.

The proposed Project site is currently undeveloped, and therefore, no electric, natural gas, water, sewage disposal, or refuse collection services are currently provided to the site. Several utility lines traverse the proposed Project site. No sumps, hoists, hydraulic lifts, floor drains, storm drains, wells, or transformers were observed on the proposed Project site.

Salt Creek is located along the northern and western Project boundaries. Gold Run Creek is located along the eastern and southern Project boundaries. Storm water flows into these creeks and onto adjacent parcels. No standing surface waters, including pits, ponds, or lagoons, were observed on the proposed Project site.

Neither stained soils, discolored water, distressed vegetation, solid waste (construction debris, demolition debris, etc.), nor the presence of an obvious wastewater discharge were noticeable on the proposed Project site. No strong, pungent, or noxious odors were noticeable during the site reconnaissance. No current or past uses likely to involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products were identified during the site reconnaissance. In addition, no obvious recognized environmental conditions were observed for the proposed Project.

5.2.5 OTHER POTENTIAL RISKS

WILDLAND FIRE POTENTIAL

Hills and mountains surround the westerly portion of the City of Redding which are covered mostly with grasses, brush, oak trees and Gray Pines. The climate in this area is generally referred to as a "Mediterranean," with rainfall concentrated during the cool winter months. The rains usually cease sometime in April and resume in November. Summer drought causes vegetation to become extremely dry and a regional weather phenomenon, the northerly winds, can aggravate an already very hazardous fire situation. The hillside areas of the western portion of the City have, therefore, been classified as a very high fire hazard severity zone. With extreme dryness; often ten percent or less in relative humidity; high temperatures, over 100 degrees; and windy conditions, 20 to 40 mph, a wildfire can become uncontrolled, spreading through vegetative fuels, exposing and possibly consuming structures.

The following three factors contribute significantly to wildland fire behavior:

- **Topography:** As slope increases, the rate of wildland fire spread increases. South facing slopes are also subject to greater solar radiation, making them drier and, thereby, intensifying wildland fire behavior. However, ridge tops may mark the end of wildland fire spread, since fire spreads more slowly or may even be unable to spread downhill unless wind-driven.



- Fuel: Weight and volume are the two methods of classifying fuel, with volume also referred to fuel loading (measured in tons of vegetation material per acre). Each fuel is assigned a burn index (the estimated amount of potential energy released during a fire), an estimate of the effort required to contain a wildfire and an expected flame length. The fuel's continuity is also an important factor, both horizontally and vertically.
- Weather: Variation on weather conditions have a significant effect on the occurrences and behavior of wildfires. Short-term conditions, such as high heat, low humidity and high winds, facilitate the ignition and rapid spread of fires. Conversely, cool temperatures, high humidity and little to no wind reduce the risk of wildfires and allow fires to be contained more readily. Long-term conditions, such as prolonged droughts, also play a major role in fire susceptibility.

Other factors such as dense vegetation growth and a large accumulation of dead plant materials in areas that have not been mitigated or burned for many years increase the wildfire hazard. Steep terrain compounds the wildfire risk because fires normally burn much faster uphill. Rugged terrain also hinders fire suppression attempts by hampering the mobility effectiveness of firefighters and equipment.

If not promptly controlled, wildland fires may grow into an emergency or disaster. Firestorms occur during extreme weather with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted. Even small fires can threaten lives and resources and destroy improved properties.

Integration of five fire determinants (human proximity, vegetation, access, slope and wind direction) have delineated two natural fire hazard potential zones for the City of Redding. A very high fire hazard severity risk equates to areas lying to the immediate west of central Redding with manzanita, buck brush and other highly combustible vegetation; along with steep 20 to 40 percent slope; and somewhat limited access. The proposed Project lies within a very high fire hazard area. The medium to low risk equates to areas in the vicinity of developed property; grass and scattered oak; over more level to gentle, 0 to 20 percent slope; and available access. In general, wildfire is not a major threat in the flat, developed areas of Redding. However, fire is a major problem in the fringe-urban and hill areas on the west side of Redding. This increased risk is due primarily to a predominance of the north facing slopes that are characteristically more vegetated than those of the southern aspect. Within the west side, the highest fire risk areas are located in the hilly populated regions. All major determinants of fire risk point to this area as the most critical area for the City of Redding.

This major risk involves loss of lives and property which lies in those developed areas along the west side of Redding. Here property damage is not an uncommon occurrence. These interface and transitional areas are constantly vulnerable. As development extends more and more into the foothill areas, the situation becomes increasingly acute.

Given the topography, climate and vegetation on the west side of Redding, it is conducive to have fast spreading wildfires. According to the California Department of Forestry and Fire Protection of Shasta County's Fire Hazard Map, the entire Project site is located within the very high fire hazard severity zone.

ULTRAMAFIC ROCK AND NATURALLY OCCURRING ASBESTOS

Ultramafic rocks are dark, heavy, and rich in iron and magnesium minerals. They begin as igneous rocks starting in high temperature environments well below the surface of the earth. Ultramafic rocks may be partially to completely altered to serpentinite (a type of metamorphic rock) by the time they are exposed at the surface by uplift and erosion. Naturally-occurring asbestos fibers, including chrysotile asbestos and



tremolite-actinolite asbestos, are more likely to be encountered in, and immediately adjacent to, areas of ultramafic rock due to the metamorphic processes of formation. Historically, asbestos has been used in manufactured goods due to its fibrous and heat-resistant characteristics. Serpentine rock, often containing asbestos, has also been used extensively as base material in the construction of new roads. Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. All types of asbestos are now considered hazardous and pose public health risks. The California Air Resources Board (CARB) regulates the use of asbestos containing materials.

The potential occurrence and distribution of naturally-occurring asbestos fibers in Shasta County is documented by the California Department of Conservation, also known as the California Division of Mines and Geology). According to the *General Location Guide for Ultramafic Rocks In California*, the Project site is not located near any areas that are likely to contain ultramafic rock.¹ In addition to association with ultramafic rock and serpentinite, asbestos minerals are also known to occur in association with certain geologic faults, non-ultramafic related metamorphic rock types, and magnesium rich carbonate rocks such as dolomite. These asbestos occurrences are much less common and their locations less well known than for ultramafic rocks.

The proposed Project is not expected to result in the release of naturally occurring asbestos during construction activities. If naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a registered geologist, or an Air Pollution Control Officer (APCO) in the Project area after the start of any construction or grading, state regulation §93105, *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining*, would take effect. Refer to Section 5.6, AIR QUALITY, for further discussion of air quality issues related to the proposed Project.

RADON POTENTIAL

Radon isotope-22 is a colorless, odorless, tasteless radioactive gas that is a natural decay product of uranium. Uranium and radon are present in varying amounts in rocks and soil, and radon is present in background concentrations in the atmosphere. Current evidence indicates that increased lung cancer risk is directly related to radon-decay products. The EPA has recommended an "action" level for indoor radon concentrations at or exceeding 4 pico-curies per liter of air (pCi/l). California ranks as the third lowest for percentage of homes exceeding 4 pCi/l. The U.S. EPA uses three zone designations in order to reflect the average short-term radon measurement that can be expected in a building without the implementation of radon control methods. The radon zone designation of the highest priority is Zone 1. According to the EPA Map of Radon Zones, Shasta County is in Zone 3, meaning there is low radon potential.²

Specific indoor radon information can only be obtained through a sampling and testing program for the future structures. However, based on the soil composition and topography of the proposed Project site and the lack of existing on-site structures, the potential for radon concentrations exceeding 4 pCi/l is anticipated to be very low.

¹ California Department of Conservation, *A General Location Guide for Ultramafic Rocks In California*. Accessed July 8, 2008. Available at: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf

² EPA Map of Radon Zones: <http://www.epa.gov/radon/zonemap/california.htm>. Accessed July 2, 2008.



5.2.6 REGULATORY FRAMEWORK

The EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes responsibility for issuing permits and monitoring and enforcing compliance. The management of hazardous materials and waste within the State of California is under the jurisdiction of the California Environmental Protection Agency (Cal/EPA) and the DTSC. The Cal/EPA was created by the State of California to establish a cabinet level voice for the protection of human health and the environment and to assure the coordinated deployment of state resources. The DTSC regulates hazardous waste, clean-up of existing contamination, emergency planning, and identifies alternatives to reduce the hazardous waste produced in California. Additionally, the Regional Water Quality Control Board (RWQCB) regulates the quality of water within the state, including contamination of state waters as a result of hazardous materials and/or waste. Other local departments (i.e., fire department, environmental health services department, etc.) may also have jurisdiction over hazardous materials; refer to Table 5.2-1, SUMMARY OF HAZARDOUS MATERIALS REGULATORY AUTHORITY.

**TABLE 5.2-1
Summary of Hazardous Materials Regulatory Authority**

REGULATORY AGENCY	AUTHORITY
Federal Agencies	
United States Department of Transportation (DOT)	Hazardous Materials Transport Act – Code of Federal Regulations (CFR) 49
Environmental Protection Agency (EPA)	Federal Water Pollution Control Act Clean Air Act Resource Conservation and Recovery Act (RCRA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Superfund Amendments and Reauthorization Act (SARA) Federal Insecticide, Fungicide and Rodenticide Act
Occupational Safety and Health Administration (OSHA)	Occupational Safety and Health Act and CFR 29
State Agencies	
Department of Toxic Substances Control (DTSC)	California Code of Regulations
Department of Industrial Relations (CAL-OSHA)	California Occupational Safety and Health Act, CCR Title 8
State Water Resources Control Board (WRCB) and Regional Water Quality Control Board (RWQCB)	Porter-Cologne Water Quality Act Underground Storage Tank Law
Health and Welfare Agency	Safe Drinking Water and Toxic Enforcement Act
Air Resources Board and Air Pollution Control District	Air Resources Act
Office of Emergency Services (OES)	Hazardous Materials Release Response Plans/Inventory Law
Department of Food and Agriculture	Food and Agriculture Code
State Fire Marshall	Uniform Fire Code, CR Title 19
Local Agencies	
City of Redding	Local Hazard Mitigation Plan



Prior to August 1992, the principal agency at the federal level regulating the generation, transport, and disposal of hazardous waste was the EPA under the authority of the Resource Conservation and Recovery Act (RCRA). As of August 1, 1992, the DTSC was authorized to implement the State's hazardous waste management program for the EPA. The EPA continues to regulate hazardous substances under the Comprehensive Response Compensation and Liability Act (CERCLA).

STATE REGULATIONS

Department of Toxic Substances Control

The California DTSC is responsible for restoration, protection, and enhancement of the environment; ensuring public health, environmental quality, and economic vitality through regulating hazardous waste; conducting and overseeing cleanups; and developing and promoting pollution prevention. DTSC implements programs that oversee cleanups, prevent releases by ensuring waste is properly generated, handled, transported, stored, and disposed of; enforcing laws; promoting pollution reduction; encouraging recycling and reuse; conducted toxicological evaluations; and involving the public in decisions. DTSC also oversees the siting and cleanup of schools.

California Government Code

Government Code §65962.5 requires the DTSC, State Department of Health Services, the State Water Resources Control Board, and the California Integrated Waste Management Board to assemble and annually update lists of hazardous waste sites and hazardous waste properties within California. The Secretary for Environmental Protection distributes these lists to each city and county where sites on the lists are located. Prior to approval of a development project by a lead agency the applicant shall consult these lists to determine that the project site is not listed.

State of California Division of Oil, Gas, and Geothermal Resources

The Division of Oil, Gas, and Geothermal Resources (DOGGR) is the State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program promotes the wise development of oil, natural gas, and geothermal resources in California through sound engineering practices, prevention of pollution, and assurance of public safety. To implement this program, DOGGR recommends avoidance of building over or near plugged and abandoned wells, or the replugging of wells to current DOGGR standards.

CEQA Guidelines

State *CEQA Guidelines* §15186 requires proposed school projects and any project located near a school to be examined for potential health impacts caused by hazardous materials, wastes, and substances. These impacts are to be discussed in an environmental document.

California Public Resources Code

CEQA statute 21092.6 requires land agencies to consult with the compiled lists discussed above to determine whether a project or alternatives are located on a hazardous waste site.



California Building Code

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations (CCR), Title 24, Part 2, known as the 2007 California Building Code (CBC). The California Department of Forestry and Fire Protection (CAL FIRE) and the Office of the State Fire Marshal (OSFM) revised the mandatory effective date for those areas where local government has responsibility for wildland fire protection to July 1, 2008, to enable local government agencies more time to review and accept the fire hazard severity zone maps that will be presented to them formally after the new year.

Recently adopted building codes and standards reduce the risk of burning embers igniting buildings. Codes already in effect place standards on roofing construction and attic venting. The new building codes require siding, exterior doors, decking, windows, eaves wall vents, and enclosed overhanging decks to meet new test standards. The new ignition resistant codes apply to all fire hazard zones in the state responsibility area and in very high Fire Hazard Severity Zones in local responsibility areas. In addition, the new building rules require rural homeowners to clear brush and tress 100 feet around their homes, rather than 30 feet, the previous standard.

The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the wildland urban interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale. It is likely that the fire hazard severity zones will be used by local government as they update the safety element of general plans.

California Education Code

The California Education Code §17213(a)(3) prohibits the approval of a school site if the site "contains one or more pipelines, situated underground or aboveground, which carries hazardous substances, acutely hazardous substances, or hazardous wastes, unless the pipeline is a natural gas line which is used only to supply natural gas to that school or neighborhood." California Education Code §17213.1 requires DTSC to be involved in the environmental review process for the acquisition or construction of a school property utilizing state funding. The responsible school board is required to contract with an environmental assessor to supervise the preparation of a site evaluation to determine the potential for hazards or hazardous materials to exist on or near the site that could affect future staff and students, prior to acquiring a school site.

LOCAL REGULATIONS

City of Redding General Plan

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects pertaining to hazardous materials and emergency response. Applicable goals relative to the proposed Project site within these elements are listed in Table 5.2-2, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR PUBLIC HEALTH AND SAFETY, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.



TABLE 5.2-2
Consistency Analysis with City of Redding General Plan
Goals and Policies for Public Health and Safety

General Plan Goals and Policies	Analysis
<p><i>Policy HS9A:</i> Require new developments that produce, store, utilize, or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.</p>	<p>The nature of the proposed Project as a single- and multi-family subdivision does not present a significant risk related to hazardous materials or emissions.</p>
<p><i>Policy HS9C:</i> Require that soils containing toxic or hazardous substances be remediated to the satisfaction of the agency having jurisdiction prior to the granting of any permits for new development.</p>	<p>The Phase I ESA conducted for the proposed Project site revealed that no stained soils were found on the Project site.</p>
<p><i>Policy HS4B:</i> Require that all new development and redevelopment meet State and local standards for fire protection; encourage the upgrade of existing structures to current standards.</p>	<p>The proposed Project would be required to comply with State and local standards, including conditions of approval regarding fire protection. In addition, the incorporation of mitigation measures identified in this section would help to reduce potential fire danger.</p>
<p><i>Policy HS4E:</i> Utilize appropriate techniques, such as those illustrated in Figure 4-8 [of the Health and Safety Element], to reduce fire damage in those areas with a high wildland fire potential. The actual combination of these and/or other techniques required for a particular project will be determined by the Fire Marshal based on the level of hazard involved.</p>	<p>Implementation of the <i>General Plan</i> policies, the California Fire Code State standards, and required MM 5.2-3a through MM 5.2-3d would serve to reduce wildland fire hazards to less than significant levels.</p>
<p><i>Policy HS4I:</i> Generally require each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.</p>	<p>A primary access for the proposed Project will be provided via the extension of Buenaventura Boulevard. Two additional access points are located along Eureka Way (SR-299).</p>

Source: *City of Redding General Plan*, October 2000.



City of Redding Local Hazard Mitigation Plan

The City of Redding *Local Hazard Mitigation Plan's* purpose is to fulfill the federal Disaster Mitigation Act of 2000 (DMA), which calls for all communities to prepare mitigation plans. The Plan includes resources and information to assist City residents, public and private sector organizations, and others interested in participating in planning for hazards. The Plan provides a list of mitigation activities that may assist the City in reducing risk and preventing loss from future hazard events. FEMA approved the Plan on September 29, 2005, thus making Redding eligible for disaster relief and mitigation funds.

Wildland Fires

Wildland fire hazards exist within the numerous gulches and heavily wooded slopes found in the City. Areas of particular concern are those where wildland features and urban development interface. These portions of the City designated by the State of California with the highest wildland fire potential are shown in *General Plan* Figure 4-7 (Wildland Fire Hazard Areas) of the Health and Safety Element. The entire Project site is located in an area with very high fire hazard potential.

Evacuation Routes

According to the *General Plan*, the City is subject to a variety of potential hazards. Evacuations may be necessary from time to time, and the routes utilized will often depend upon the type, location, and extent of the emergency. Figure 4-9 (Evacuation Routes, Flooding) and Figure 4-10 (Evacuation Routes, Wildland Fires) of the Health and Safety Element, identify those routes in, through, and out of the City considered most suitable for certain mass evacuations. As illustrated in Figures 4-9 and 4-10, Eureka Way (SR-299) is designated as an evacuation route associated with flooding and wildland fires.

5.2.6 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Appendix G of the State *CEQA Guidelines* contains the Initial Study Environmental Checklist form used during preparation of the Project Initial Study, which is contained in Appendix 15.1, INITIAL STUDY/NOTICE OF PREPARATION, of this EIR. The Initial Study includes questions regarding hazards and hazardous materials. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a Project may recreate a significant impact if it causes one or more of the following to occur:

- 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 accidental conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous substances or waste within one-quarter mile of an existing or proposed school (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);



- Be located on a site that 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 (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- 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; and/or
- Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

5.2.7 IMPACTS

Public health and safety impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.2-1 ***PROJECT CONSTRUCTION ACTIVITIES WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC THROUGH FORESEEABLE UPSET AND ACCIDENTAL CONDITIONS.***

Impact Analysis: Project construction activities are not anticipated to result in a significant release of hazardous materials into the environment. As noted above, a physical inspection of the proposed Project site, as part of the ESA, did not reveal evidence of hazardous materials and waste present within the Project site. In addition, local regulatory agency records were reviewed to help determine whether hazardous materials have been handled, stored, or generated on the Project site and/or the adjacent properties and businesses. No hazardous materials records related to the Project site were found. Several agencies have published documents that list businesses or properties that have handled hazardous materials or waste or may have experienced site contamination. The governmental sources provided by EDR reported that no aboveground or underground storage tanks have ever been located on the Project site, and no potential for RECs was found. In addition, the proposed Project is not in an area identified as containing ultramafic rock formation and is not expected to result in the release of naturally occurring asbestos during construction activities.

However, during Project construction, there is a possibility of accidental release of hazardous substances, such as spilling petroleum-based fuels used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant because of the small volume and low concentration of hazardous materials utilized during the construction phases. The Project contractor



would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released would be appropriately contained and remediated as required by local, state, and federal law. If naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner /operator, a registered geologist, or an Air Pollution Control Officer (APCO) in the Project area after the start of any construction or grading, state regulation §93105, *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining*, would take effect. Adherence with federal, state, and local regulations would minimize short-term construction impacts related to potential hazardous material releases to less than significant levels.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

EMERGENCY RESPONSE / EVACUATION PLAN

5.2-2 **THE PROPOSED PROJECT WOULD NOT IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN.**

Impact Analysis: The proposed Project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area. *General Plan* Figure 4-9 (Evacuation Routes, Flooding) and Figure 4-10 (Evacuation Routes, Wildland Fires) of the Health and Safety Element, identify those routes in, through, and out of the City considered most suitable for certain mass evacuations. As illustrated in Figures 4-9 and 4-10, Eureka Way (SR-299) is designated as an evacuation route associated with flooding and wildland fires. Any street closure or temporary obstruction during construction activities would be subject to all emergency access standards and requirements, and/or review by the City of Redding Fire Department. In addition, adherence to the *General Plan* policies pertaining to hazards and hazardous materials set forth in the City's *General Plan* would reduce these impacts to less than significant levels.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

WILDLAND FIRE THREAT

5.2-3 **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.**

Impact Analysis: Many locations within the City of Redding, including the proposed Project, are identified as having a very high wildland-fire hazard potential due to an intermixture of urban/rural uses and natural areas with high fuel loads and varied terrain. The presence of urban development adjacent to wildlands increases the likelihood of wildland fires, and the presence of wildlands adjacent to urban development allows fire to spread rapidly to and through developed areas. The *General Plan* identifies the proposed Project as being located in an area with very high wildland-fire hazard potential; therefore, development of



the proposed Project would place residential uses within this zone, thus exposing people and structures to a potential risk of loss, injury, or death involving wildland fires.

The fire safety of residences depends upon their location with respect to topography, the continuity and loading of fuels around them, and the structural design of the residential units. The potential for structural damage from wildfires is greater in certain locations because of the nature of the spread of fires, which is affected by, among other factors, topography, fuels, humidity, and wind. The proposed site design includes open space throughout the Project site. The open space buffer is comprised mostly of areas of steep slopes, which through inaccessibility would provide minimally disturbed transition zones with native vegetation. The areas where open space backs up to residential lots within the Project site are of concern due to their potential to spread wildland fires. These areas are in steep terrain, subject to high winds with little obstruction and contain highly flammable native vegetation.

Figure 5.2-1, FIRE FUEL REDUCTION PLAN, provides for the fuel treatment prescriptions within the open space areas adjacent to future on-site structures. The purpose of the fuel reduction plan is to reduce fire-fuel loads to establish an adequate fire-safety buffer between the proposed residential units and adjacent wildlands. Two fire fuel modification zones, as indicated on Figure 5.2-1, have been established for the proposed Project.

Implementation of the California Fire Code State standards for building construction and MM 5.2-3a through MM 5.2-3d would serve to reduce wildland fire hazards to less than significant levels. Refer to Section 5.7, BIOLOGICAL RESOURCES, for an assessment biological impacts associated with implementation of the proposed Fire Fuel Reduction Plan.

Mitigation Measures:

MM 5.2-3a A Vegetation Management/Fire Fuel Reduction Plan (Plan) shall be submitted for approval by the Fire Marshal and Development Services Department in conjunction with Project improvement plans. The objectives of the Plan shall be to reduce fire-fuel loads to establish an adequate fire-safety buffer between proposed residences and adjacent wildlands subject to the following criteria:

1. Two primary fuel-reduction areas shall be established as follows:

ZONE 1: This zone shall include the area on-site within 100 feet of a building site that abuts natural open space. Within Zone 1, 80 to 90 percent of the existing brush (manzanita, ceanothus, etc.) shall be removed. Trees shall be saved except where approved to support development otherwise. Trees shall be limbed up to 8 feet.

ZONE 2: This zone shall include a 100-foot-wide band parallel and immediately adjacent to the Zone 1 clearance area where located on-site. Within Zone 2, vegetation shall be reduced so that 50 percent of brush is cleared and trees are limbed up to 8 feet. Where crown closure of existing vegetation is already 50 percent or less, only ground level fuels will be reduced.

All fuel-reduction zones shall be measured on a horizontal plane.



Source: Sharrah Dunlap Sawyer, Inc., April 1, 2009.

LEGEND

-  WETLANDS
-  STREAMS (SEE REPORT PROVIDED BY ESA DATED AUG 2007)
-  SALT CREEK CORRIDOR SETBACK (25' FROM RIPARIAN, 50' TOP OF BANK)
-  24-UNIT APARTMENT BUILDINGS

- NOTES:**
1. THIS ZONE SHALL INCLUDE THE AREA WITHIN 100 FEET OF THE RESIDENCES. WITHIN ZONE 1, 90% TO 100% OF THE EXISTING BRUSH SHALL BE REMOVED. TREES, 6" DIAMETER AND GREATER, SHALL BE SAVED EXCEPT WHERE APPROVED SUBDIVISION IMPROVEMENTS WILL BE LOCATED. AT THE TIME OF HOME CONSTRUCTION ADDITIONAL FUEL-LOAD REDUCTION MAY BE REQUIRED CONSISTENT WITH ZONE 1 STANDARDS BASED ON THE ACTUAL LOCATION OF THE STRUCTURE TO PROVIDE A 100-FOOT SETBACK OF THE RESIDENCE FROM THE ZONE 2 CLEARANCE AREA.
 2. AREAS WITHIN 100' OF ZONE 1, VEGETATION SHALL BE REDUCED SO THAT THE CROWN CLOSURE OF BRUSH AND TREES IS APPROXIMATELY 50%. WHERE CROWN CLOSURE OF EXISTING VEGETATION IS ALREADY 50%, NO REDUCTION IN FUEL LOAD IS TO OCCUR.

1. CLEARING CONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH THE CITY OF REDDING PRIOR TO COMMENCING VEGETATION MANAGEMENT / FIRE FUEL REDUCTION WORK TO ENSURE CLEARING LIMITATIONS / REQUIREMENT FOR ZONES 1 & 2.
2. SELECTIVE HAND CLEARING OR NO CLEARING WITHIN 25' OF DEFINED WATER CHANNEL OR ANY RIPARIAN VEGETATION.

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Fire Fuel Reduction Plan

Figure 5.2-1





The depths of Zone 1 and/or Zone 2 may be modified by the Fire Marshal upon approval of a project-specific fire-behavior study demonstrating that a substantially similar level of protection may be provided through a combination of fuel-reduction zones and other means of mitigation.

2. Heavy motorized equipment which could promote erosions shall not be used to reduce vegetation in areas with slope that are steeper than 20 percent or where located within 100 feet of a creek. Hand clearing or use of equipment with rubber tires is preferred. Other types of equipment may be used only if authorized by the Fire Marshal, Development Services Department, and Regional Water Quality Control Board pursuant to an approved erosion control plan.
3. All required fuel-reduction work shall be completed by the Project Applicant prior to issuance of a building permit. Ongoing maintenance of the fire-fuel management zones shall be the responsibility of either the landscape maintenance district or the homeowners' association.

MM 5.2-3b Building construction which abuts the open vegetation areas, open space easements or dedications, including accessory buildings, shall meet the following minimum construction requirements:

1. All homes shall be provided with residential sprinkler systems.
2. Roof material on all buildings shall be of a Class "A" rating. For roof coverings where the profile allows a space between the roof covering and sheathing, the space at the eaves end must be fire-stopped to keep out flames or embers (i.e. arch-tile roofs).
3. Wood fences, excluding posts shall be prohibited adjacent to open space areas. A fence may be provided but it must be of a noncombustible material. Additionally, the first ten feet perpendicular from the noncombustible fencing adjacent to open space shall also be noncombustible.
4. Any projections for the structure, including but not limited to, balconies and patio covers shall be enclosed on the sides and/or undersides with materials approved for one-hour, fire-resistive construction on the exterior side, to prevent heat or exterior fires from being trapped underneath the projection.
5. Materials for balconies, patio covers and decks must be construction of noncombustible material as approved by the Fire Marshal.
6. Structures constructed in such a manner that they are suspended on piers or pilings over hillsides, shall be of noncombustible construction, fire-retardant-treated wood or heavy timber, or enclosed on the sides with materials approved for one-hour, fire-resistive construction on the exterior side in such a manner as to prevent the underside of the structure from being subject to heat or flame from the hillside below.
7. Venting shall not be located on the downhill side of the structure when the California Building Code venting regulations can be met without installation of downhill



venting. When attic and underfloor vents are necessary on the buildings, they shall be louvered and screened with 1/4- inch metal mesh screen to prevent entry of sparks or burning ember. Turbine attic vents shall be equipped to allow one-way direction only; they shall not free-spin in both directions.

8. Siding shall be of a noncombustible material and the eaves shall be protected with material approved for one-hour, fire-resistive construction on the exterior side.
9. Exterior windows, window walls, glazed doors, and glazed opening with exterior doors shall be insulated glass units with a minimum of one tempered pane, either in or out, or glass blocks or have a fire-resistive rating of not less than 20 minutes or other assemblies as approved by the City of Redding Building Division and Fire Department. Glazing frames made of vinyl materials shall have a welded corner and metal reinforced in the interlock area and display ANSI/AAMA/NWWD.
10. Skylights shall be tempered glass or dual-pane.
11. Gutters shall be constructed with noncombustible material and include measures to prevent the collection of leaves and debris in the gutter.
12. Prior to any vertical construction, a 20-foot-wide all-weather-surface road shall be constructed and remain serviceable to all developing lots and fire hydrants shall be installed with adequate fire flows available for fire-suppression purposes.

MM 5.2-3c Prior to occupancy of residential lots, vegetation clearance around structures shall meet the minimum requirement of the RMC Title 9, §9.20.160 and *General Plan* Policy HS4E. To ensure property owners are well informed of the threat of wildland fires, the following disclosure statement shall be provided as part of the transfer of property title:

1. The owner acknowledges that said property is located within a very high wildland-fire hazard zone and said property and associated structures could be subject to damages or catastrophic losses associated with wildland fires.
2. The owner acknowledges the provisions of RMC Title 9, §9.20.160 requiring proper maintenance of firebreaks around occupied structures, including all required structure maintenance requirements.

MM 5.2-3d Throughout the duration of on-site construction activities, the following tasks shall be performed:

1. A 30-foot fuel modification zone, from the curb line, shall be provided along both sides of all roads and driveways or functional equivalent.
2. All flammable vegetation and fuels caused by site development shall be legally disposed of or removed prior to fire season.
3. Project Applicant shall prepare a fire protection plan that will provide temporary emergency access and fuel modification zones for phased development during construction.



4. Any grass or other vegetation planted along cut/fill areas (i.e., roadways for erosion control purposes) shall be low growing (less than 18 inches in height) and approved by the Fire Marshal.

Level of Significance: Less than significant impact with mitigation incorporated.

LONG-TERM MAINTENANCE AND OPERATION

5.2-4 PROJECT IMPLEMENTATION WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE LONG-TERM USE OF HAZARDOUS SUBSTANCES FOR THE PURPOSE OF LONG-TERM MAINTENANCE.

Impact Analysis: The nature of the proposed Project as a single- and multi-family subdivision does not present a significant risk related to hazardous materials or emissions. Future on-site uses include 440 residential units (248 single-family units, 96 clustered single-family units, and 96 apartment units), a neighborhood park, and open space. Therefore, the on-site use and storage of hazardous materials may include fire suppressing substances, cleaning solvents, fuel, fertilizers, pesticides, and other materials used in the regular maintenance of residential structures. With proper use and disposal, these chemicals are not expected to result in hazardous or unhealthful conditions for nearby residents or maintenance workers. Future on-site uses would be required to comply with all applicable local, state and federal regulations and policies regarding hazardous materials. Less than significant impacts are anticipated in this regard.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

CUMULATIVE IMPACTS

5.2-5 THE PROPOSED PROJECT, IN COMBINATION WITH OTHER CUMULATIVE PROJECTS, WOULD NOT INCREASE EXPOSURE TO THE PUBLIC OF HAZARDOUS SUBSTANCES.

Impact Analysis: Development within the City of Redding, in accordance with the *General Plan*, would be required to comply with the regulations, standards, and guidelines for storage, use, and disposal of hazardous materials established by the U.S. EPA, Shasta County, and the City of Redding. Any transportation of hazardous materials is required to comply with the regulations of the California Department of Transportation (Caltrans) and the California Highway Patrol (CHP). New development would be reviewed by federal, state, and local agencies and would be required to comply with hazardous materials handling regulations. As each project is required to undergo environmental review and comply with regulations, overall cumulative impacts would be less than significant. Compliance with the applicable federal, state, and local regulations, which includes safety standards, would minimize the potential cumulatively considerable impacts on the proposed Project site. Therefore, the proposed Project, in conjunction with future projects, would not result in cumulatively considerable impacts from hazards or hazardous materials.



Development within the City would increase the City's population and would increase the amount of hazardous materials in the City. The proposed Project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area. Adherence to the *General Plan* policies pertaining to hazards and hazardous materials set forth in the City's *General Plan* would reduce these impacts to less than significant levels. Therefore, the Project does not have the capacity to contribute to cumulative hazardous materials impacts.

Future development within the City's established very high fire hazard area would be required to undergo environmental analysis pursuant to CEQA. Similar to that identified for the proposed Project, project specific mitigation measures would be required on a project-by-project basis to minimize impacts of wildland fires on future urbanized areas. Policies contained within the City's *General Plan* address fire prevention measures on open space lands to reduce the risk of wildland fires. *General Plan* Policy HS4B requires all new development to meet State and local standards for fire protection, while *General Plan* Policy HS4E promotes the use of techniques to reduce fire damage in areas of high wildland fire potential. With implementation of MM 5.2-3a through MM 5.2-3d, the proposed Project would not significantly contribute to cumulative impacts related to wildland fires.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



5.3 AESTHETICS, LIGHT & GLARE

This section describes the existing visual environment in and around the Salt Creek Heights Subdivision project area. It assesses the potential for aesthetics, light, and glare impacts using accepted methods of evaluating visual landscape quality, as well as identifying the type and degree of changes the proposed Project would likely have. The analysis in this section is primarily based on information provided by the Project applicant and verified through a site visit conducted by RBF Consulting on August 5, 2008. Photographic documentation and visual simulations are utilized to supplement the visual analysis and to fulfill the requirements of the California Environmental Quality Act (CEQA).

A key focus is the effects of the proposed Project as viewed from key vantage points (viewpoints) adjacent to the Project site. Public scenic vistas, impacts on scenic resources, the degradation of character/quality, and the introduction of new sources of light and glare are also considered. The potential impacts associated with the proposed Project are evaluated on a qualitative basis through a comparison of the anticipated Project effects with the existing environment. The evaluation of Project impacts is based on a professional judgment, analysis of the City's visual resources as identified in the *General Plan*, and the significance criteria established by the Initial Study Checklist of the State *CEQA Guidelines*. Mitigation measures are recommended to reduce the significance of potential impacts where necessary.

5.3.1 EXISTING CONDITIONS

The City of Redding is situated in Shasta County in the northern end of the Sacramento Valley, where the valley meets the foothills of the Cascade mountain range. The City is located within approximately 35 miles of Trinity, Shasta, and Lassen National Forests. The regional topography in the area allows for a wide variety of visual resources, including views of Mount Shasta, the Trinity Alps, and the Lassen Range. As most of the area is undeveloped, public views are afforded; refer to Figure 5.3-1, EXISTING CONDITION PHOTOGRAPHS. The Sacramento River, bluffs, steeper hills, canyons to the north and west, floodplains, and creeks are highly valued resources. Numerous oaks and pines, as well as other trees, also contribute to the scenic quality of the City.

The Project site is located in the western portion of the City, approximately 800 feet south of the Sacramento River. Although the Sacramento River flows regionally in a north-south direction, the river flows east-west along the Project site. The general area is characterized by gentle to moderate rolling hills, comprised of vacant, vegetated land.

SCENIC RESOURCES

The City's *General Plan* identifies scenic resources within the vicinity of the Project site as water features and visible ridgelines. It should be noted that these identified resources are not protected by policy. Specifically, the City of Redding *General Plan* identifies glistening water, sheer cliffs, tree-lined banks, and the network of creeks and gullies as important scenic assets to the City. Water features within the Project area include the Sacramento River, Salt Creek, and Gold Run Creek. Visible ridgelines consist of the Cascade mountain range including Mount Shasta at 14,179 feet above mean sea level (amsl), Lassen Peak at 10,462 feet amsl, and the Trinity Alps.

-  Orientation
-  Photograph Number



1 View of project site from the Buenaventura Trail east of the project site.



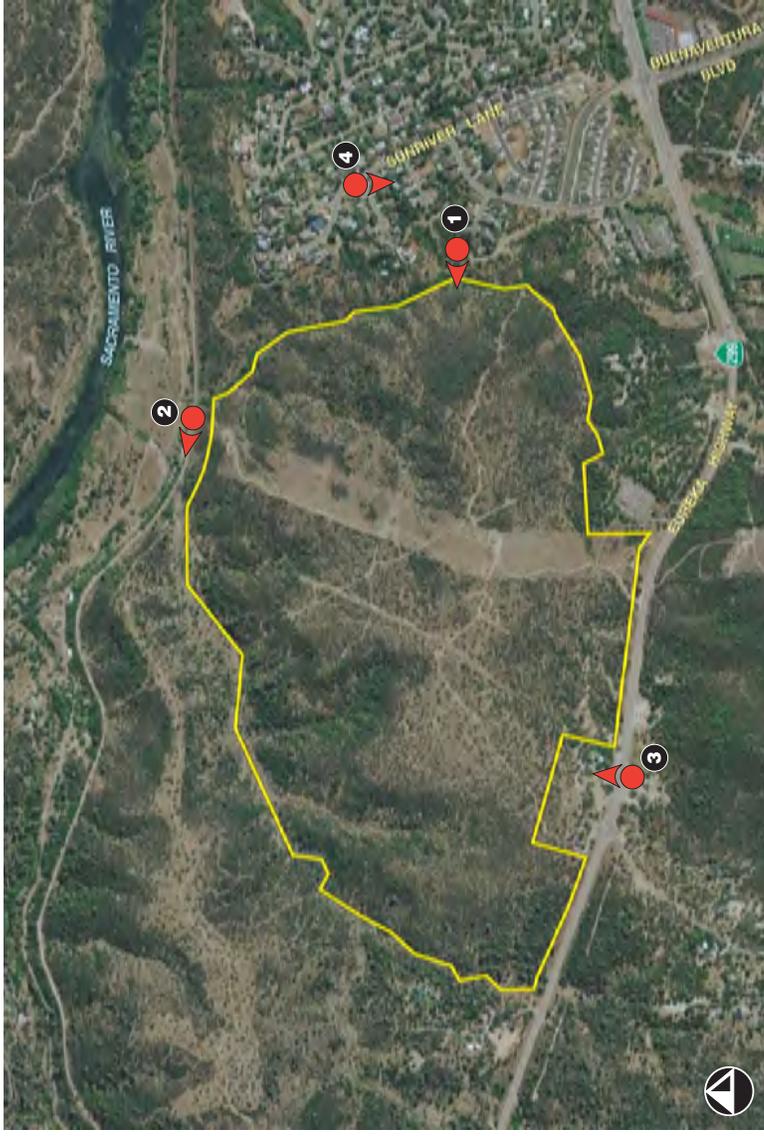
2 View from the Sacramento River Trail north of the project site on the south side of the Sacramento River.



3 View of the typical rural commercial and residential uses south and west of the project site.



4 View of residential uses to the east of the project site.



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Existing Condition Photographs



According to the City's *General Plan*, the Sacramento River is one of the most significant scenic resources in the City, and identifies the Sacramento River as a major focal point of the community. Due to the location and importance of the Sacramento River within the City, the River offers the highest potential for the provision of regional recreational and open space opportunities. The adjoining creeks, Salt Creek, located on the northern and western boundaries of the Project site, and Gold Run Creek, which borders the eastern boundary of the site, are both tributary to the Sacramento River to the north of the Project site.

Based on the California Scenic Highway Mapping System, there are no State designated scenic highways located within and surrounding the Project site. The State designates Eureka Way (SR-299) as an "eligible" scenic highway in the western portion of Shasta County, located south of the Project site.

According to the California Department of Transportation (Caltrans), the status of a scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. Upon official designation as a Scenic Highway, a local government body may eliminate and/or prevent unsightly development to occur within the corridor through a program involving the reasonable exercise of its powers.

VISUAL CHARACTER / QUALITY

The Project site currently consists of undeveloped land. A power transmission easement is present on-site, approximately 362 feet in width at the widest point, bisecting the site in a north-south direction. In addition, several other smaller overhead transmission lines cross the site at various locations. Several small riparian and designated seasonal wetland areas are located on the east, south, and west portions of the Project site. Salt Creek defines the north and west boundaries of the site, while Gold Run Creek borders the eastern boundary, and Eureka Way (SR-299) trends along the southern boundary. Other intermittent as well as several ephemeral streams are located within the Project site.

The surrounding area consists of the Sacramento River and Sacramento River Trail to the north, the Buenaventura Trail and residential uses to the east, Eureka Way (SR-299) and heavily vegetated vacant land to the south, and vegetated vacant land and few rural residential uses to the west.

On-Site Views

On-site elevations range from approximately 520 feet amsl to approximately 740 feet amsl. On-site views are generally to surrounding ridgelines to the north and west associated with the Cascade and Coastal Mountain Ranges. Views from the Project site also include Salt Creek to the north and west and Gold Run Creek to the east. Visible vegetation includes blue oak woodland, blue oak-grey pine, mixed chaparral, and riparian and seasonal wetland. There are currently no public views on the Project site, as the site does not contain any public uses.

Off-Site Views

The proposed Project is located in an undeveloped area characterized by sloping topography and dense vegetation. The majority of off-site views to the Project site are blocked by vegetation and topography. Surrounding uses include the Sacramento River to the north, as well as residential and commercial land uses to the east, south, and west. The following is a description of views toward the Project site from surrounding land uses:



North Views. Northern views from rural residential uses to the south (approximately 0.30 miles south of the Project site) are not afforded due to the existing topography and vegetation that screen views. Travelers along Eureka Way (SR-299) to the south of the Project site would have limited northern views to the Project site. Existing topography and dense vegetation screen views to the Project site; however, views to the proposed entrances would be afforded..

East Views. Eastern public views from off-site rural residents located approximately 0.13 miles west of the Project site are not afforded due to the intervening vegetation and topography.

Travelers heading eastbound on Eureka Way (SR-299) have views of rolling hills and vacant land associated with the Project site. These views are limited due to the existing topography and off-site development to the south of the Project site.

South Views. Southern views from the Sacramento River Trail (north of the Project site) include rolling hills and dense vegetation. Background views of distant mountains of the Coastal Mountain Range are also included. The residential uses located approximately 0.75 miles north of the Project site include views to the rolling hills and vegetation, the electrical easement across the Project site, and distant Coastal Mountain Range.

West Views. Western views from the residential uses near Buenaventura Boulevard (approximately 300 feet east of the Project site) are partially afforded due to the existing topography and vegetation. Gold Run Creek and distant background ridgelines of the Coastal Mountain Range are also visible from these uses. Also, those traveling westbound on Eureka Way (SR-299) have limited views to the proposed Project entrance as a result of the existing topography and dense vegetation.

LIGHT AND GLARE

Lighting effects are associated with the use of artificial light during the evening and nighttime hours. There are two primary sources of light: light emanating from building interiors passing through windows and light from exterior sources (i.e., street lighting, building illumination, security lighting, parking lot lighting, and landscape lighting). Light introduction can be a nuisance to adjacent residential areas, diminish the view of the clear night sky, and if uncontrolled, can cause disturbances. Uses such as residences and hotels are considered light sensitive, since occupants have expectations of privacy during evening hours and may be subject to disturbance by bright light sources. Light spill is typically defined as the presence of unwanted light on properties adjacent to the property being illuminated. With respect to lighting, the degree of illumination may vary widely depending on the amount of light generated, height of the light source, presence of barriers or obstructions, type of light source, and weather conditions.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Perceived glare is the unwanted and potentially objectionable sensation as observed by a person as they look directly into the light source of a luminaire. Daytime glare generation is common in urban areas and is typically associated with buildings with exterior facades largely or entirely comprised of highly reflective glass. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Glare-sensitive uses include residences, hotels, transportation corridors, and aircraft landing corridors.



On-Site

Light and glare are not currently generated within the boundaries of the Project site, as the site is vacant.

Off-Site

Minimal light and glare emanate from the surrounding residential land uses to the north and east as well as from Eureka Way (SR-299) (i.e., vehicle headlights) to the south. These uses do not create substantial or unusual amounts of light or glare in the Project area. Rural land uses to the south and west of the Project site do not significantly contribute to light and glare in the area.

5.3.2 REGULATORY FRAMEWORK

CITY OF REDDING GENERAL PLAN

The City of Redding *General Plan*, Community Development and Design Element, provides goals, policies, and implementation measures to reduce visual impacts from future development. This element discusses the City's existing landscape setting and character. Applicable goals, policies, and implementation measures relative to the proposed Project are listed in Table 5.3-1, CONSISTENCY ANALYSIS WITH THE CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR AESTHETICS, LIGHT AND GLARE, followed by a brief explanation of how the proposed Project complies with the goals, policies, and implementation measures.

CITY OF REDDING MUNICIPAL CODE

RMC Title 17, §17.54.260 includes regulations pertaining to hillside lots. Where cluster subdivisions with lot widths less than fifty-five feet are on a hillside with the side slopes in excess of seven percent slope, retaining walls are required to be constructed along all side property lines from five feet in front of a dwelling to ten feet behind a dwelling. Walls are required to consist of a decorative block, concrete, or equivalent material and must be approved by the City's Building Division. RMC Title 16, Chapter 16.60 requires a landscape plan to be prepared by a registered landscape architect for new multi-family residential development. A maintenance program is also required as part of the landscape plan. Single-family residential development is exempt from the requirements of a landscape plan.

RMC Title 18, *Zoning Ordinance*, §18.01.020, includes limitations on future building along hillside areas with slopes greater than 20 percent. The *Zoning Ordinance* is intended to direct growth toward areas where infrastructure and services can be provided, maintain the appearance and function of new and existing development, provide compatibility, protect environmentally sensitive areas, and maintain aesthetic benefits of hillside areas by limiting development on slopes exceeding 20 percent. Additionally, Chapter 18.48 of the *Zoning Ordinance* establishes waterway corridor setback requirements. Salt Creek requires an average corridor buffer of 25 feet from riparian, and 50 feet from top of bank. The proposed Project would include estate lots within the vicinity of Salt Creek. However, these lots would be appropriately set back as required by the RMC. Also, due to the equestrian nature of these lots, visible encroachment on the creek would be minimal.



TABLE 5.3-1
Consistency Analysis with City of Redding General Plan Goals and Policies
for Aesthetics, Light and Glare

General Plan Goals, Policies, and Objectives	Analysis
<p>Goal CDD3: Ensure a proper balance between development areas and the natural environment.</p> <p>Goal CDD5: Ensure a proper relationship between stream corridors and urban development.</p> <p>Policy CDD5A: Establish appropriate development standards along those stream corridors depicted in Figure 1-3 in order to:</p> <ul style="list-style-type: none"> • Promote the aesthetic value of the adjacent natural area. • Provide public views and access to the stream corridor. • Protect the privacy and security of adjacent residences. <p>Goal CDD7: Retain the natural appearance of steep hillside areas and designated ridge lines.</p> <p>Policy CDD7A: Protect the visual integrity of prominent ridge lines that can be viewed from key public gathering areas, the river, visitor destinations, and community gateways. Utilize one or more of the following measures to avoid or minimize development impacts:</p> <ul style="list-style-type: none"> • Public or private purchase of lands, the use of conservation easements, or similar measures. • Performance standards, including limitations on building heights and/or increased ridge-line setbacks and standards for use of appropriate building forms, colors, and materials that blend into their surroundings. <p>Goal CDD8: Promote the development of a cohesive, well-defined City.</p>	<p>The <i>General Plan</i> has anticipated development of the Project site with residential uses. The Project proposes all structures on slopes less than 20 percent. However, roadways within the Project site are proposed in areas with slopes greater than 20 percent. Buffer areas would be incorporated in development design in areas of the Project site near Salt Creek and Gold Run Creek. The Project concentrates most development toward the center of the Project site, and proposes the conservation of approximately 142.8 acres of open space near Salt Creek, Gold Run Creek, and the Sacramento River.</p> <p>The proposed Project would orient development in a way (established by the <i>General Plan</i>) to provide public views and access to on-site stream corridors.</p> <p>The Project proposes to maintain 142.8 acres as on-site open space. Structures would be sited in accordance with the <i>General Plan</i> to provide public views and access to the stream corridors.</p> <p>The Project, as currently proposed, would not construct habitable structures on slopes greater than 20 percent. The proposed building pads would be placed along the hillside in a manner that would reduce grading activities. However, access roads to the proposed "Out Parcels" would occur on slopes greater than 20 percent. Also, the proposed Project is not located on a designated ridge line.</p> <p>The proposed Project is not located on a prominent ridgetop, as identified in the <i>General Plan</i>. However, two prominent ridgetops, as defined by the <i>General Plan</i>, are located to the north and south of the Project site, and have views to the site. As approximately 142.8 acres of open space is proposed, the majority of background views toward heavy vegetation and visible hillside at the Project site would remain. The Project would include appropriate setbacks and performance standards including appropriate building forms, colors, and materials that blend into the surroundings. Fuel modification zones would encroach upon the required creek setbacks. However, no structures would exceed the creek setback requirements.</p> <p>Residential and park uses proposed are consistent with the surrounding residential developments and the City's <i>General Plan</i>.</p>



TABLE 5.3-1 (Continued)
Consistency Analysis with the City of Redding General Plan Goals and Policies
for Aesthetics, Light and Glare

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy CDD8A:</i> Maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features.</p>	<p>The Project site is well-defined and clustered centrally on-site. The site is bordered by Salt Creek, Gold Run Creek, the Sacramento River, and Eureka Way (SR-299). Implementation of the proposed Project would maintain these community edges using proposed open space land uses.</p>
<p><i>Goal CDD11:</i> Ensure that new residential development is well-located and well-designed and can accommodate a mixture of housing types and uses.</p>	<p>The proposed Project is located within the City's Primary Growth Area and has been anticipated by the <i>General Plan</i>. A range of residential (i.e., single- and multi-family housing, and custom homes) and open space uses (including a public park) are proposed.</p>
<p><i>Policy CDD11D:</i> Allow residential developments to include a mix of densities and dwelling types, provided that the proposed development is in scale with the neighborhood and that the total dwelling unit count is consistent with the applicable General Plan density range depicted on the General Plan Diagram.</p>	<p>Refer to the response to <i>Goal CDD11</i>, above.</p>
<p><i>CDD16C:</i> Utilize street tree-planting as a unifying visual element along the streets; establish a street tree-planting and maintenance program.</p>	<p>As part of the PD Plan a tree planting plan will be developed for the street side parkway. A maintenance program would be established as part of the proposed development.</p>
<p><i>Goal CDD17:</i> Provide residential streets that are designed to reduce vehicle speed, that encourage pedestrian use, and that are aesthetically pleasing.</p>	<p>Refer to the response to <i>Goal CDD16C</i>, above. Planted trees along sidewalks would encourage pedestrian use, as well as enhance the aesthetics of the Project site.</p>
<p><i>Policy CDD17B:</i> Encourage new neighborhoods to incorporate detached sidewalks and landscaped "parkways" between the curb and sidewalk. Continuous and consistent tree-planting to form canopy closure is encouraged.</p>	<p>Refer to Response <i>Goal CDD16C</i>, above.</p>
<p><i>Goal CDD18:</i> Reduce the visual impact of utilities and communication facilities.</p>	<p>Utilities that would service the Project site would be located underground. The on-site transmission line easement would remain on-site, however, the Project would utilize open space features in the vicinity of the overhead transmission lines.</p>
<p><i>Policy CDD18A:</i> Place new electric distribution lines underground in new development.</p>	<p>Refer to the response to <i>Goal CDD18</i>, above.</p>
<p><i>Policy CDD18B:</i> Place existing overhead distribution lines underground upon development of the abutting property where feasible.</p>	<p>Refer to the response to <i>Goal CDD18</i>, above. The on-site transmission lines are regional transmission facilities that are not owned or operated by the City. Also, undergrounding these overhead transmission lines is not feasible due to the size of the transmission lines.</p>

Source: *City of Redding General Plan*, October 2000.



RMC Title 18, §18.40.090 provides lighting standards within the City. Exterior parking and building lighting is regulated to eliminate light spillover and glare for safety considerations. All new construction projects are required to submit a lighting plan detailing locations, size, height, and design of all outdoor lighting. Lighting is required to be shielded and directed downward and away from adjacent properties.

5.3.3 STANDARDS OF SIGNIFICANCE

The potential aesthetic, light, and glare impacts associated with projects are evaluated on a qualitative basis. The evaluation of project impacts are based on professional judgment, analysis of the City's visual resources policies, and the significant criteria established by CEQA.

CEQA THRESHOLDS

Appendix G of the State *CEQA Guidelines* contains the Initial Study Environmental Checklist form used during preparation of the proposed Project Initial Study, which is contained in Appendix 15.1, INITIAL STUDY/NOTICE OF PREPARATION, of this EIR. The Initial Study includes questions regarding aesthetics, light and glare. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a Project may create a significant impact if it would:

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

Based on these standards, the effects of the proposed Project have been categorized as either a "less than significant impact" or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

5.3.4 IMPACTS

Aesthetic, light and glare impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.3-1 GRADING AND CONSTRUCTION OF INDIVIDUAL PHASES WOULD TEMPORARILY ALTER THE VISUAL APPEARANCE OF THE PROPOSED PROJECT AREA.

Impact Analysis: The development of the proposed Project would have short-term impacts as a result of construction debris and construction-related activities. Surrounding residents, recreational users, and travelers along Eureka Way (SR-299) would have views to construction-related debris. Implementation of the proposed Project would be constructed in eight phases over an anticipated eight year period. Ultimately,



the pace of development would be predicated on economic conditions being conducive for buyers purchasing homes. Grading operations would occur during eight separate phases. The total grading would be balanced on-site, as there would be no off-site transportation of cut/fill materials.

During construction, trucks hauling construction materials to the Project site would be required to access the site via Eureka Way (SR-299). Trucking would also be required for the delivery and removal of excavation equipment, cranes, other machinery, and the delivery of materials.

Scenic Vistas and Highways

No designated scenic vistas or highways are located within the vicinity of the Project site. Therefore, no impacts would result from short-term construction impacts to designated scenic vistas or highways.

Degradation of Existing Character/Quality

Visible construction activities at the Project site would result in temporary impacts to the existing character/quality at the Project site. Viewers located above-grade (residents to the north and east) would have views of Project construction activities. The proposed Project would be subject to the requirements of the RMC and standard conditions of approval, grading plans would be required to be submitted to the Development Services Director concurrently with the development plans, and would be subject to approval through the design review process set forth by the Planning Commission. All grading and earth work activities would be conducted in accordance with an approved construction grading plan and grading permit issued by the City Engineer. Less than significant impacts would occur in this regard.

Light and Glare

Short-term light and glare impacts associated with construction activities would likely be limited to nighttime lighting (for security purposes) in the evening/nighttime hours. With respect to construction and building, §18.40.100(F)(2) (Construction and Demolition) of the RMC limits demolition/grading/construction operations on weekdays from May 15th through September 15th between the hours of 6:00 a.m. and 7:00 p.m., weekdays from September 16th through May 14th between the hours of 7:00 a.m. and 7:00 p.m., and weekends and holidays year-round between the hours of 9:00 a.m. and 8:00 p.m. Therefore, as potential lighting sources would only be present for short periods of time, as would cease at no later than 8:00 p.m., impacts in this regard are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

LONG-TERM CHARACTER/QUALITY IMPACTS

5.3-2 PROJECT IMPLEMENTATION WOULD NOT PERMANENTLY ALTER VIEWS OF AND ACROSS THE PROJECT SITE.

Impact Analysis: The visual analysis of any project must consider the existing visual character and quality of the area as defined by the City's *General Plan*. The Project site lies on the urban edge of the City and open space areas are currently located to the north, south, and west of the Project site. The Project consists of undeveloped land. One large transmission line easement traverses the site in a north/south direction. Vacant land underlying the transmission lines is highly disturbed due to vegetation clearing requirements



set by the City's Fire Department. The Project site's rural landscape is characterized by mostly mixed chaparral, as well as dense trees, watercourses, blue oak woodland, blue oak-grey pine, and seasonal wetlands located along intermittent streams.

Project implementation would permanently alter the appearance of the Project site, as anticipated by the *General Plan*. The Project would construct a variety of housing types and a 13.9-acre neighborhood park. The Project would preserve approximately 142.8 acres of open space. Project structures would be visible from uses to the north and east, which include both residences and recreational users along the Buenaventura Trail and the Sacramento River Trail. Although the proposed structures would increase the visible appearance of development at the Project site, the open space character would remain along the Project's western boundary. Pedestrian users and bicyclists would have temporary views to the proposed Project. Residents located to the north and east of the Project site would have permanent views to the visible changes in character/quality at the Project site. This change in views would be permanent and would continue through the life of the Project. The following is a discussion of the changes that would be visible from selected Viewpoints that represent sensitive uses surrounding the Project site.

Viewpoint Simulations

A viewpoint is an area that can be seen from a particular position (i.e., viewed from various locations in the Project site and along roadways to and within the area). Viewpoint simulations were prepared to demonstrate the degree of change for views toward the Project site; refer to Figure 5.3-2, VIEWPOINT LOCATIONS MAP. Selected viewpoints represent views to the Project site from areas of public rights-of-way and other publicly accessible locations.

Characteristics within each viewpoint are defined within foreground, middleground, and/or background views. Characteristics located within foreground views are located at close range and tend to dominate the view. Characteristics located within middleground views are distinguishable, yet not as sharp as those characteristics located in the foreground views. Features located within the background views have few details and distinctions in landform and surface features. The emphasis of background views is an outline or edge. Silhouettes and ridges of one landmass against another are the conspicuous visual aspects of the background, with the skyline serving as the strongest line. Objects in the background eventually fade to obscurity with increasing distance.

Photographic simulations have been utilized to depict at a conceptual level of detail the "before" and "after" conditions of the proposed Project. For comparative purposes, site photographs are used to demonstrate the general character at different points of the Project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed structures within the Project area. Although architectural details are used in the photosimulations to provide a general analysis, these architectural details have not yet been designed/finalized on a project-level basis and are subject to change upon final design.

On August 5, 2008, RBF Consulting staff visited the site to take photographs and make observations from viewpoints that were selected in consultation with City staff. The camera locations were recorded utilizing Global Positioning System (GPS) equipment. A Fuji G-617 Panoramic camera with a 1:8/105 millimeter lens was selected as the primary photographic source as it yields an accurate representation of human visual perception. Backup photos were also taken using a Nikon D1X digital camera with a fixed 50 millimeter lens.



 Direction of Photograph
 Photo Location Point and
 Photo Number



not to scale

10/31/08 JN 60-100416-15334

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Viewpoint Locations Map

Figure 5.3-2



RBF prepared a three-dimensional wire frame model using Computer Aided Design and Drafting (CADD) files and site plans provided by the Project Applicant. Electric Image Animation System software was used to align the computer model to the site photographs. The computer model was then superimposed over photographs from each of the viewpoints, and minor camera alignment changes made to all known reference points within view. Foreground masking of objects was performed with Adobe Photoshop to enhance realism.

The following discussion analyzes the Project site's potential impacts at each viewpoint. The primary focus of effects is on surrounding uses and viewers traveling along local roadways and recreational trails, and on the incorporation of mitigation measures in order to avoid or reduce the significance of impacts. Conditions analyzed include the "Existing Condition" and "Proposed Condition."

Viewpoint 1

Existing Condition

This Viewpoint (approximately 682 feet amsl) affords views of the Project from Sunset Avenue residents located to the east of the Project site; refer to Figure 5.3-3a, VIEWPOINT 1 - EXISTING CONDITION. Foreground and middleground views consist of Sunflower Drive and mature trees, shrubs, and grasses. Middleground views to the unimproved Buenaventura Trail are partially afforded. Background views that are not screened from foreground/middleground vegetation consist of rolling hills, chaparral vegetation, and partial views to the Coastal Mountain Range.

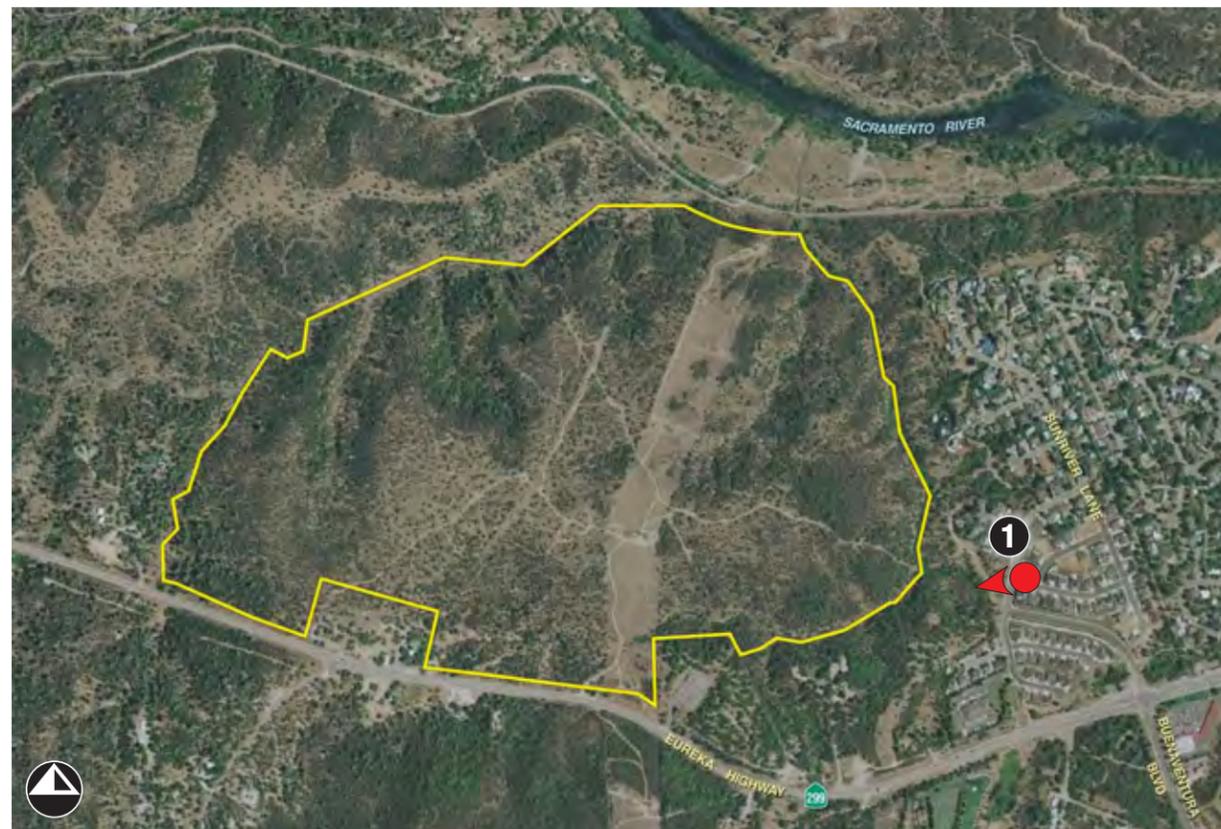
Proposed Condition

With implementation of the proposed Project, views would be slightly altered; refer to Figure 5.3-3b, VIEWPOINT 1 - PROPOSED CONDITION. The existing foreground and middleground views toward Sunflower Drive and dense vegetation would remain. The proposed extension to Buenaventura Boulevard, from Sunflower Drive toward the Project site, is visible from this Viewpoint. Partial middleground views toward the Project's residential structures are available in areas that are not screen by foreground vegetation. The majority of the proposed structures are blocked by existing vegetation. The visual quality at this Viewpoint appears similar to existing conditions, as the foreground views toward dense vegetation would remain. Therefore, visible impacts from this key view would be less than significant.

Viewpoint 2

Existing Condition

This Viewpoint (approximately 724 feet amsl) is located at the intersection of Lower Springs Road and Eureka Way (SR-299), looking north toward the Project site; refer to Figure 5.3-4a, VIEWPOINT 2 - EXISTING CONDITION. Foreground and middleground views consist of Eureka Way (SR-299) and two rural residential structures located to the south of the Project site. Visible vegetation includes mixed chaparral and ornamental vegetation associated with residential uses. Overhead power lines are visible in foreground views, parallel to Eureka Way (SR-299). Street lights are also visible along Eureka Way (SR-299). Due to existing topography and dense vegetation, background views are not afforded.

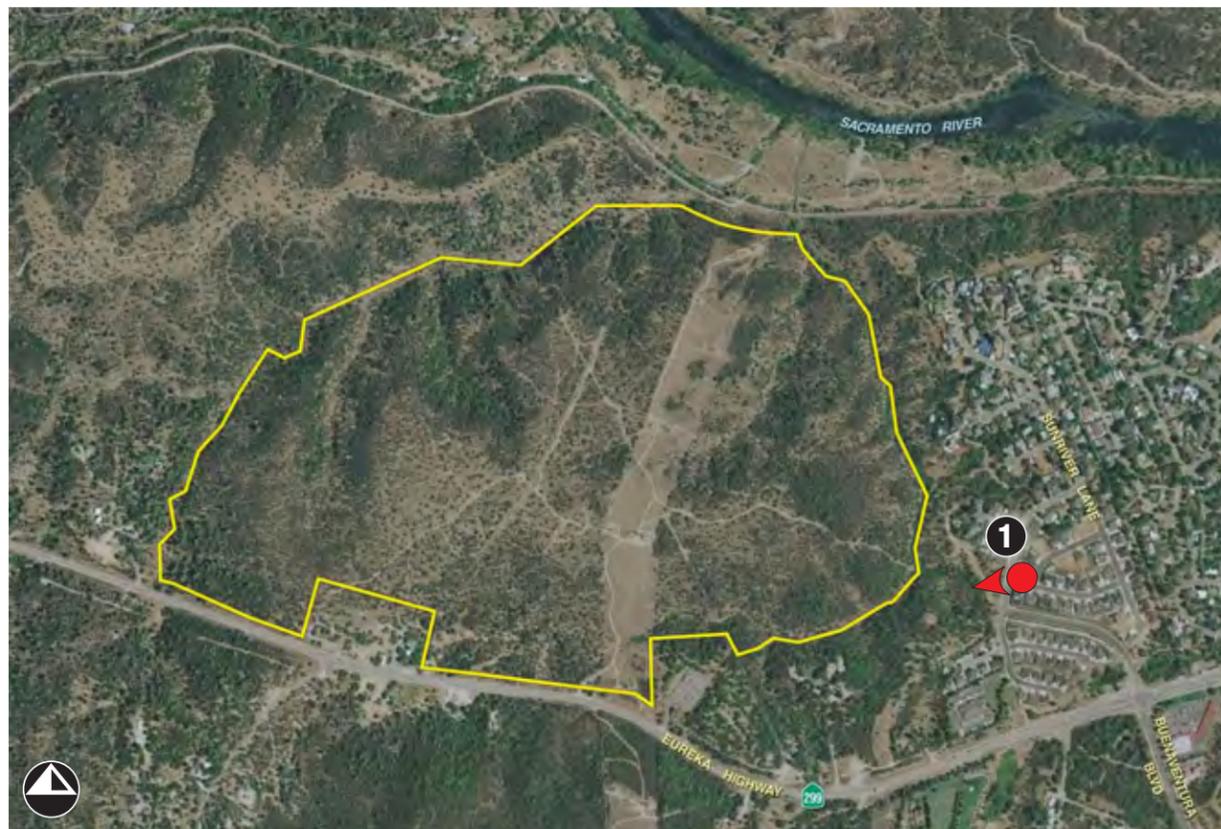


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
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Viewpoint 1 Existing Condition

Figure 5.3-3a

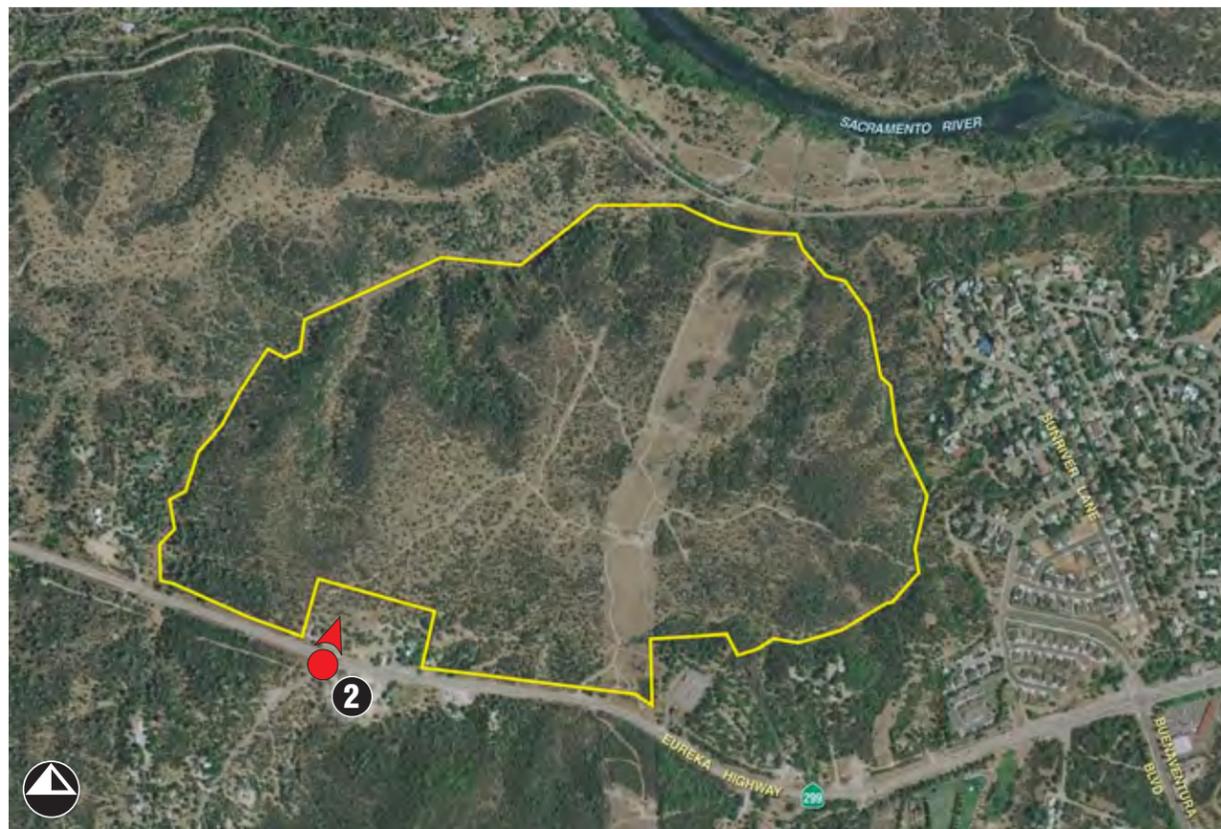


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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Viewpoint 1 Proposed Condition

Figure 5.3-3b



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 2 Existing Condition

Figure 5.3-4a



Proposed Condition

Upon implementation of the proposed Project, views from this location would be altered; refer to Figure 5.3-4b, VIEWPOINT 2 - PROPOSED CONDITION. Views of existing generally undeveloped, vegetated land, have been replaced with a proposed secondary access roadway to the Project from Eureka Way (SR-299) to the north of the Eureka Way (SR-299)/Lower Springs Road intersection. The visible utilities along Eureka Way (SR-299) (i.e., street lighting) have been moved further west to allow for the new roadway. Middleground views consist of the off-site residential structures, the new roadway, and new residential use structures. Vegetation removal activities have increased the developed appearance of this rural community. Per Chapter 16.60 of the RMC, new multi-family development requires a landscape plan to be prepared by a registered landscape architect. Additional landscaping within the Project site would serve to shield proposed structures from surrounding uses. Visible impacts from this key view would be short-duration in nature, and would be experienced only by motorists traveling along Eureka Way (SR-299) and Lower Springs Road. Impacts in this regard are less than significant.

Viewpoint 3

Existing Condition

This Viewpoint (approximately 693 feet amsl) affords views from motorists traveling eastbound along Eureka Way (SR-299); refer to Figure 5.3-5a, VIEWPOINT 3 - EXISTING CONDITION. Views consist of Eureka Way (SR-299), vacant land, rolling hillsides, and blue oak woodland vegetation.

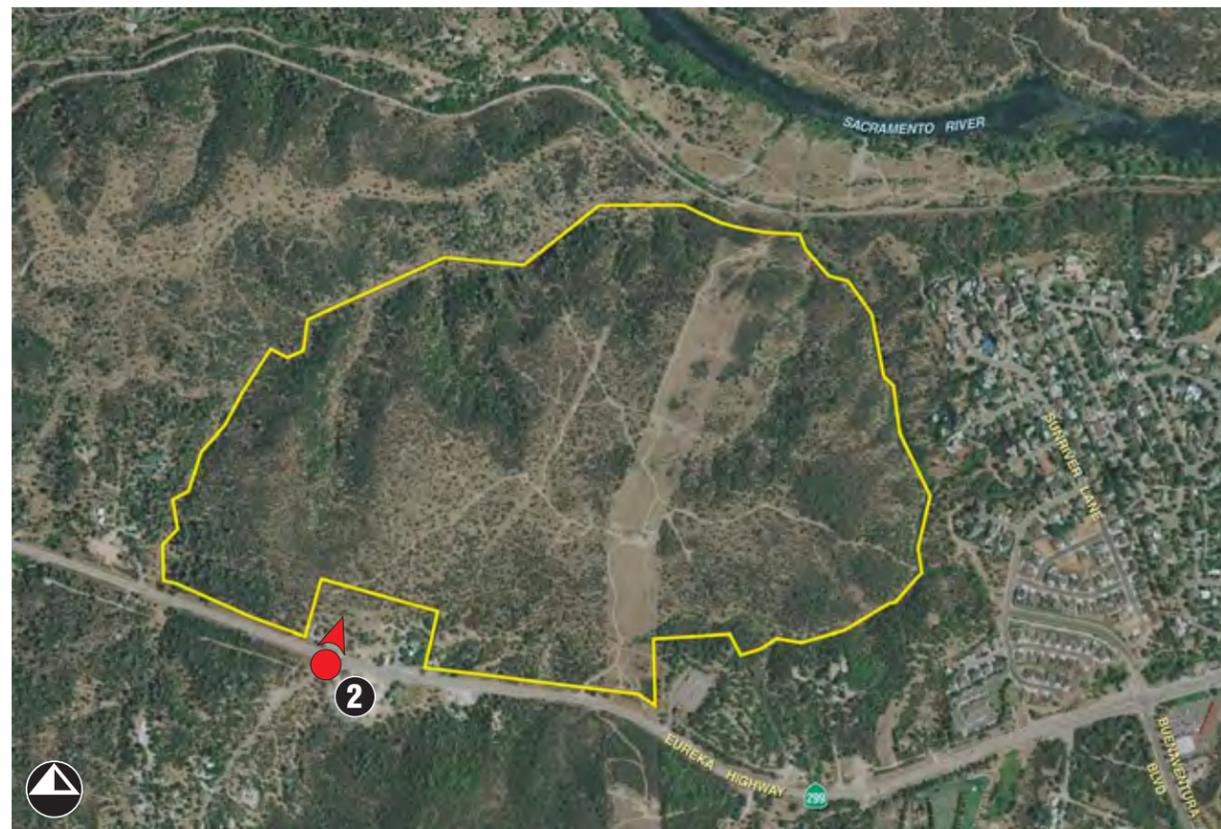
Proposed Condition

With the implementation of the proposed Project, views would not be altered; refer to Figure 5.3-5b, VIEWPOINT 3 - PROPOSED CONDITION. As no proposed structures are visible from this Viewpoint, existing foreground, middleground and background views remain the same. Minimal cutting would be visible in association with the proposed access road into the Project in middleground views. However, these visible impacts are minor in nature and impacts would be less than significant.

Viewpoint 4

Existing Condition

This Viewpoint (approximately 744 feet amsl) affords views from residential uses to the north of the Sacramento River; refer to Figure 5.3-6a, VIEWPOINT 4 - EXISTING CONDITION. Foreground views include the Sacramento River and associated riparian vegetation. A large transmission line easement is visible trending the Project site in a north/south direction. Middleground views of the Project site consist of rolling hills and mostly blue oak woodland vegetation with minimal areas of seasonal wetland and chaparral. Distant views toward the Coastal Mountain Range to the southwest are afforded. Overall visible visual quality from this Viewpoint appears to be high.



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 2 Proposed Condition

Figure 5.3-4b

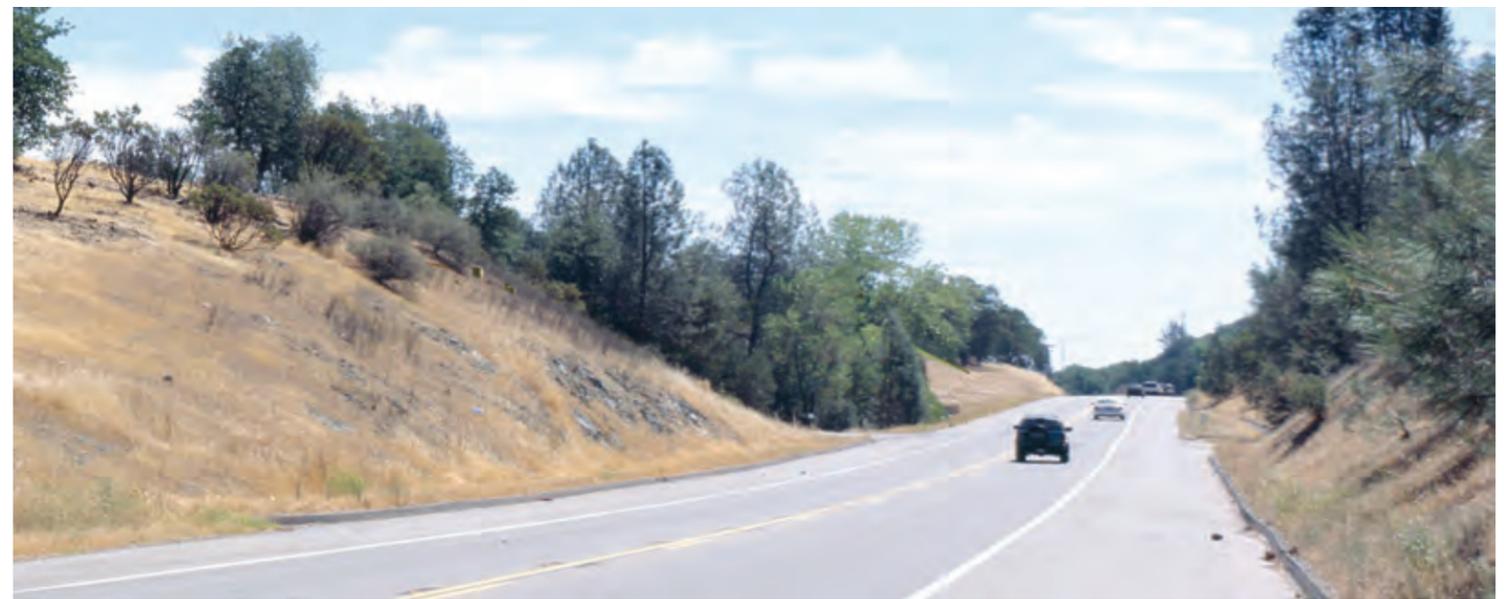


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 3 Existing Condition

Figure 5.3-5a



Note: The proposed development is not visible from this viewpoint due to the existing topography and vegetation.

Detail

-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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Viewpoint 3 Proposed Condition

Figure 5.3-5b



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 4 Existing Condition

Figure 5.3-6a



Proposed Condition

The Project structures would be partially visible atop the hill on-site; refer to Figure 5.3-6b, VIEWPOINT 4 - PROPOSED CONDITION. Foreground views along the Sacramento River would be similar to existing conditions. Middleground views toward the Project site would primarily consist of blue oak woodland vegetation. The visible Project structures would not significantly contrast to the ridgeline due to the distance of the proposed structures from this Viewpoint and the scale of the proposed residential uses within this Viewpoint. Distant views of the Coastal Mountain Range would remain. Project implementation would not substantially alter views from this Viewpoint. Impacts in this regard are less than significant.

Viewpoint 5

Existing Condition

This Viewpoint (approximately 705 feet amsl) affords views from existing residential uses within Sunday Court, to the east of the Project site; refer to Figure 5.3-7a, VIEWPOINT 5 - EXISTING CONDITION. Foreground views include Sunday Court, sidewalks, and adjacent residences. Middleground views toward the Project consist of mostly blue oak woodland and chaparral vegetation. Background views toward rolling hills and distant views to the Coastal Mountain Range are afforded. The visible quality at this Viewpoint appears to be high.

Proposed Condition

Upon the completion of construction activities, residential uses would be located along the hilltop within the eastern portion of the Project site, west of Gold Run Creek and the proposed Buenaventura Boulevard extension; refer to Figure 5.3-7b, VIEWPOINT 5 - PROPOSED CONDITION. Foreground views of the residences along Sunday Court would remain the same as existing conditions. The middleground views would include on-site medium density residential structures. Background views to rolling hills and the distant views to the Coastal Mountain Range would remain unchanged. Per Chapter 16.60 of the RMC, new multi-family development requires a landscape plan to be prepared by a registered landscape architect. Additional landscaping within the Project site would serve to shield proposed structures from surrounding uses as well as minimize the visible change in topography. Therefore, compliance with the RMC would ensure the degree of visual change would be less than significant.

Viewpoint 6

Existing Condition

This Viewpoint (approximately 620 feet amsl) affords views from the Buenaventura Trail located to the east of the Project site, adjacent to Gold Run Creek; refer to Figure 5.3-8a, VIEWPOINT 6 - EXISTING CONDITION. Foreground views include blue oak woodland vegetation. Middleground views consist of hillsides vegetated with blue oak woodland. Due to existing topographic conditions, background views consist of a partial view towards the Coastal Mountain Range. The existing character generally consists of vacant open space with a high visual quality.

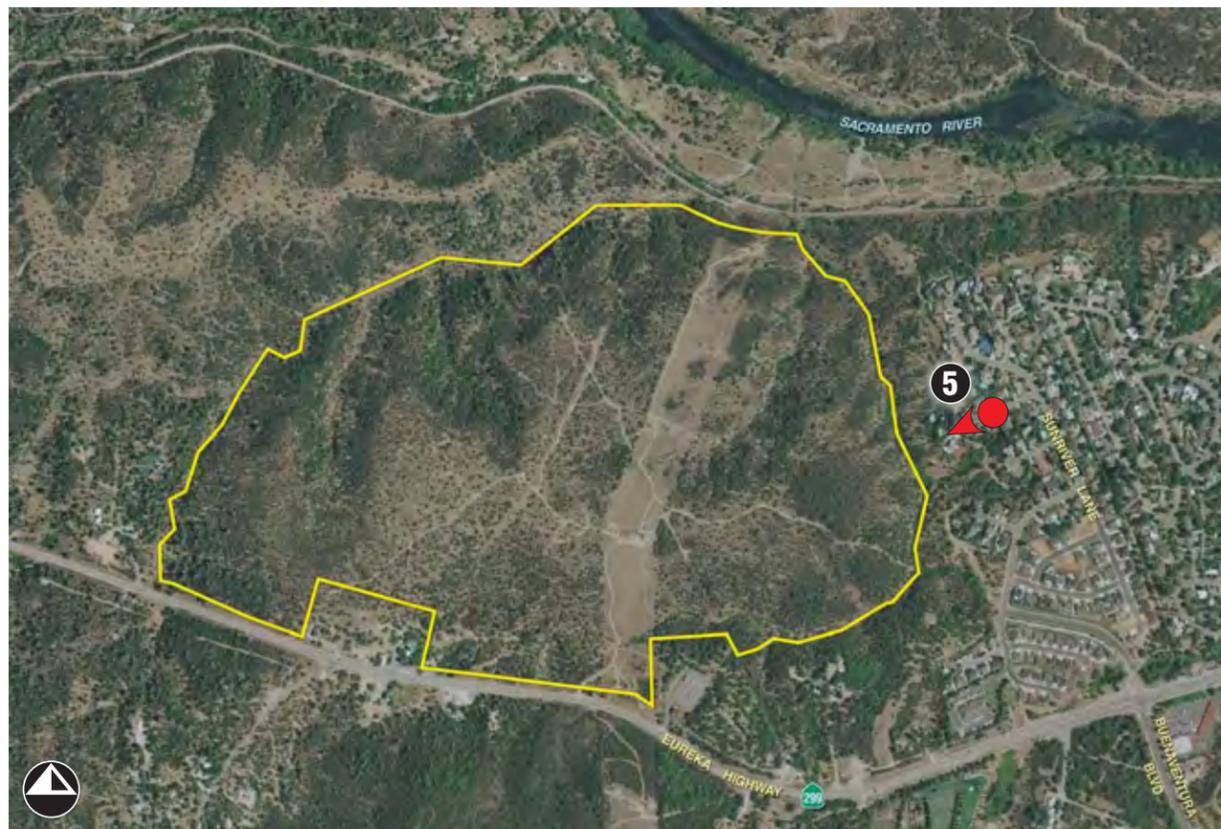


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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Viewpoint 4 Proposed Condition

Figure 5.3-6b

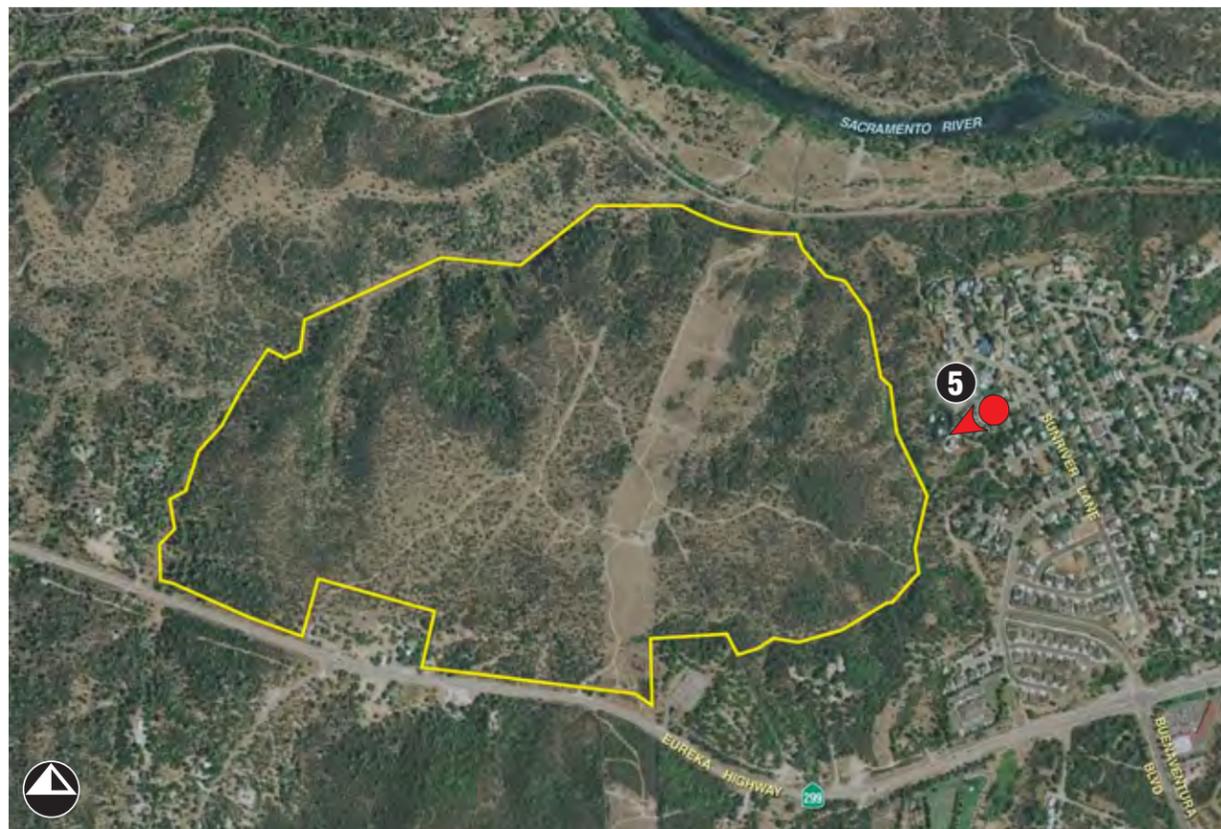


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 5 Existing Condition

Figure 5.3-7a



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 5 Proposed Condition

Figure 5.3-7b



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

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Viewpoint 6 Existing Condition

Figure 5.3-8a



Proposed Condition

Upon implementation of the Project, views toward on-site residential uses from adjacent residents would be afforded; refer to Figure 5.3-8b, VIEWPOINT 6 - PROPOSED CONDITION. Foreground views would remain unchanged. The hilltop to the west of Gold Run Creek has been graded to allow for the proposed structures. Middleground views would include proposed structures and on-site vegetation (i.e., blue oak woodland and chaparral vegetation) and distant views of the Coastal Mountain Range would remain to the west. Although Project implementation would result in a more developed appearance of the site, proposed use of the site has been planned according the City's *General Plan* and RMC. Therefore, the degree of visual change has been planned by the City and this visual change is less than significant.

Viewpoint 7

Existing Condition

Viewpoint 7 (approximately 539 feet amsl) affords views from rural residential uses to the northwest of the Project site, south of the Sacramento River; refer to Figure 5.3-9a, VIEWPOINT 7 - EXISTING CONDITION. Foreground and middleground views include rural residential uses and dense vegetation (including blue oak woodland vegetation). Due to existing topography, background views are not afforded.

Proposed Condition

The Project would not be visible from Viewpoint 7; refer to Figure 5.3-9b, VIEWPOINT 7 - PROPOSED CONDITION. Foreground and middleground views would include rural residential uses as well as dense vegetation that is similar to the existing condition. Therefore, as no change in visual character/quality would occur, no impact would result.

Viewpoint 8

Existing Condition

This Viewpoint (approximately 495 feet amsl) affords views from recreational uses along the Sacramento River; refer to Figure 5.3-10a, VIEWPOINT 8 - EXISTING CONDITION. Foreground and middleground views consist of sloping hillsides and blue oak-grey pine vegetation. Middleground views also include a large power transmission line easement. The existing rural character at this Viewpoint appears to have a moderately high visual quality.

Proposed Condition

Upon implementation of the Project, views would be altered; refer to Figure 5.3-10b, VIEWPOINT 8 - PROPOSED CONDITION. Foreground views toward sloping hillsides and dense vegetation would remain similar to existing conditions, while partial middleground views toward proposed residential structures would be afforded. Due to the proposed density and scale of the new structures, the proposed residential uses would not significantly contrast with the sloping rural hillside landscape. Views from recreational uses along the Sacramento River would not be significantly impacted as a result of Project implementation. Impacts in this regard would be less than significant.

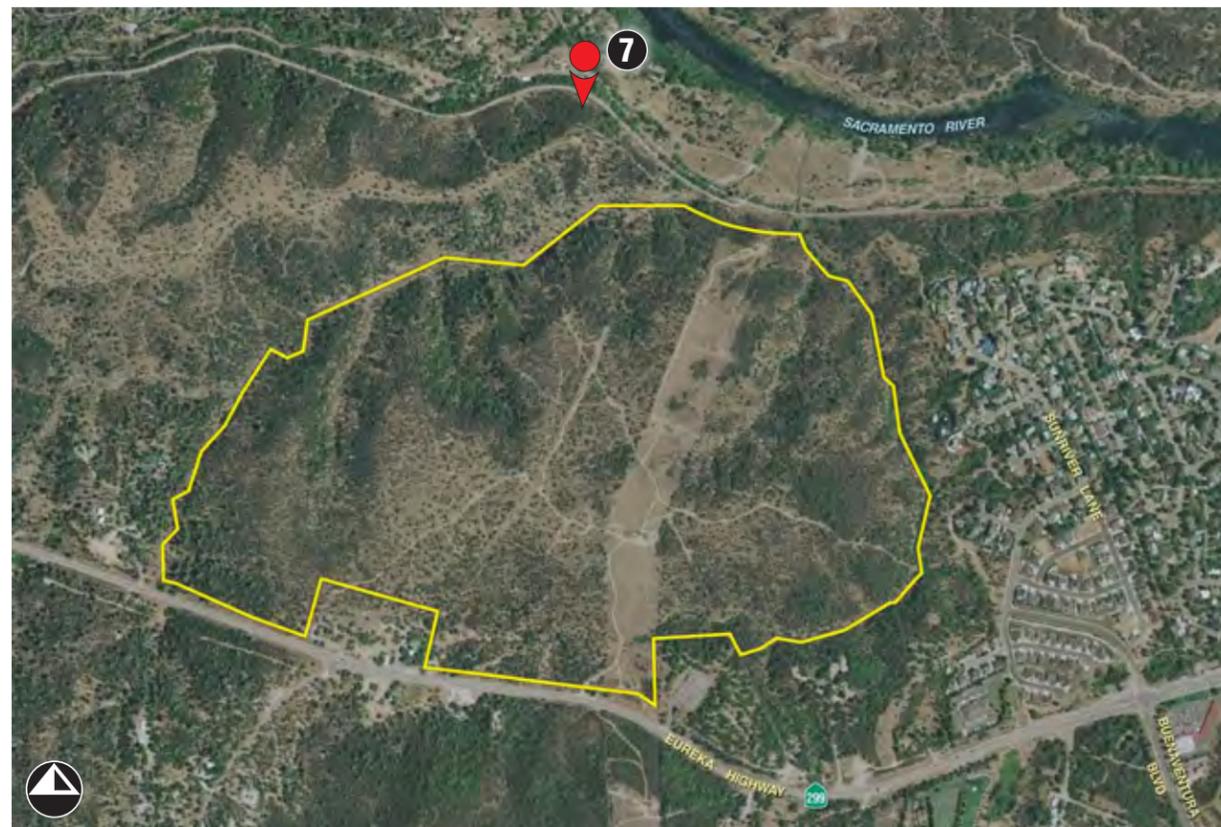


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Viewpoint 6 Proposed Condition

Figure 5.3-8b



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

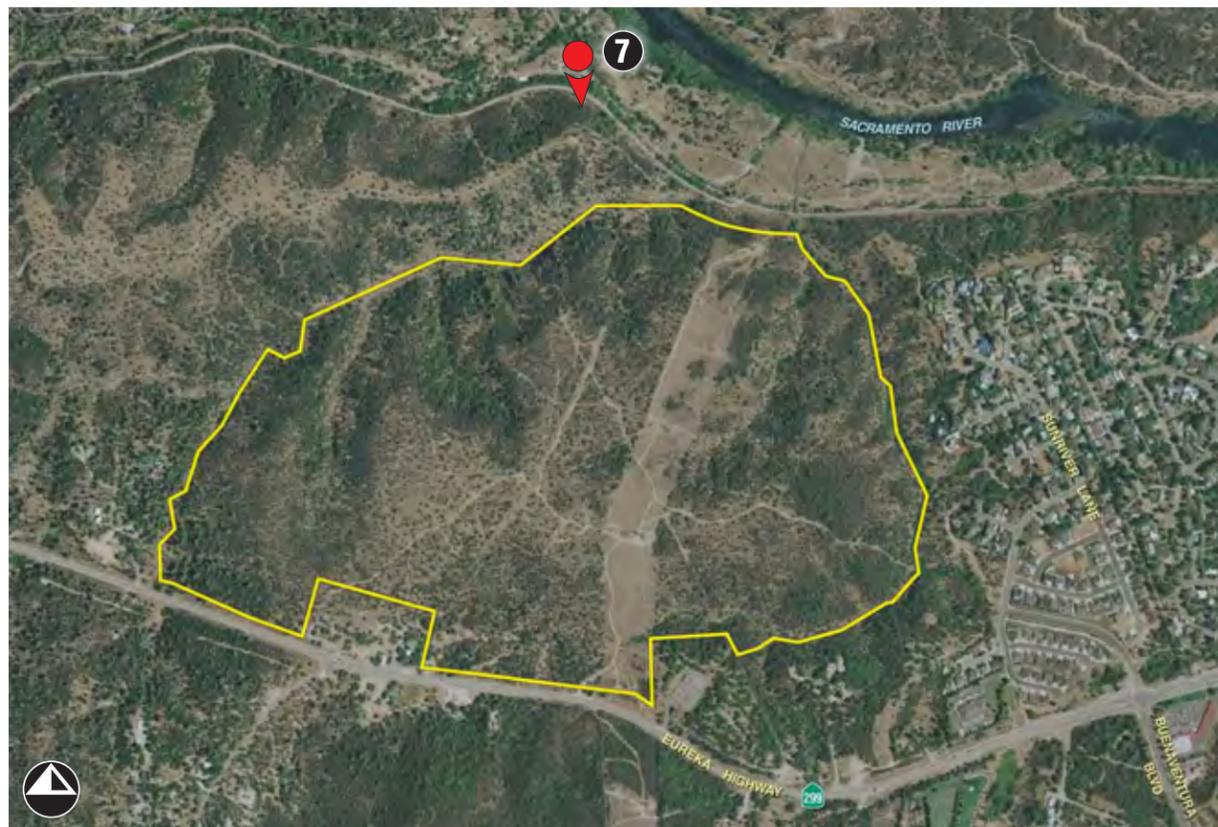
SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
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Viewpoint 7 Existing Condition

Figure 5.3-9a



NOTE: Project not visible at this Viewpoint Location.

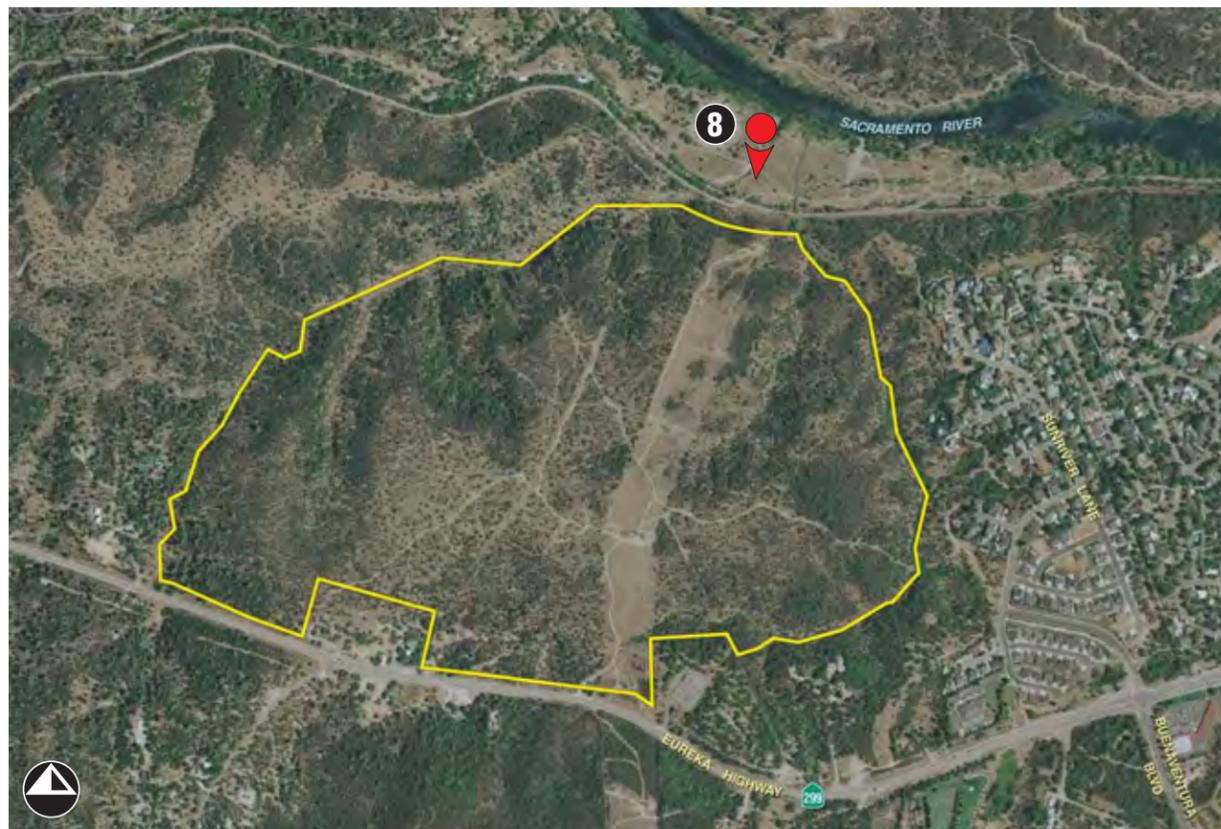


-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
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Viewpoint 7 Proposed Condition

Figure 5.3-9b



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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Viewpoint 8 Existing Condition

Figure 5.3-10a



-  Direction of Photo
-  Viewpoint Location
-  Viewpoint Number

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Viewpoint 8 Proposed Condition

Figure 5.3-10b



Conclusion

The proposed residential structures would alter the existing character of the Project site, as viewed from residents and recreational users to the east (refer to Viewpoints 5 and 6, above). The character/quality on-site would be slightly altered due to increased hardscape features, increased development within a rural character community, and visible development atop hillsides. Visible hardscape features would be blocked or partially shielded from most Key Viewpoints in the Project vicinity by existing vegetation in the foreground. Background views to distant mountain ranges and hilltops would remain similar to existing conditions upon Project implementation. The majority of views to proposed development are located within the middleground of the Key Views. These views would be minimized by views to vegetation and trees in the foreground and distant mountain ranges and hilltops in the background. Additionally, setting proposed structures into, and stepping down, the slope further minimizes the developed appearance of the rolling hillsides.

Per Chapter 16.60 of the RMC, new multi-family development requires a landscape plan to be prepared by a registered landscape architect. Additional landscaping within the Project site would help shield proposed structures from surrounding uses. Tree species would be planted along proposed structures and along the Project boundary in order to minimize the visible changes in hardscape features, topographic conditions (i.e., manufactured slopes), and proposed structures along the hilltops.

Upon implementation of the City's development process, including Project approval by the Planning Commission and City Council, the Project's aesthetic impacts would be minimized. With implementation of the City's *General Plan* and RMC requirements, development would complement natural topography and be sensitive to the relationship with adjacent water features (including Salt Creek, Gold Run Creek, and the Sacramento River).

The Project would result in changes to visible topography and portions of existing native vegetation would be replaced with the proposed structures, artificial slopes, and ornamental landscaping. With compliance with the City's *General Plan* and RMC, the proposed Project would not significantly degrade the existing character/quality at the Project site. Therefore, impacts in this regard are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

5.3-3 **PROJECT IMPLEMENTATION WOULD NOT ALTER VIEWS TO ADJACENT PROMINENT RIDGETOPS.**

Impact Analysis: Figure 1-4 (Prominent Ridgetops) in the *General Plan* identifies two areas containing prominent ridgetops in the vicinity of the Project site. The designated prominent ridgetops located to the north and south of the Project are located within the Project viewshed. This *General Plan* designation intends to preserve these specific ridgetop views from key public gathering areas, the river, visitor destinations, and community gateways. Upon Project implementation, the proposed Project would not impact views from key public gathering areas toward these designated prominent ridgetops. Therefore, impacts in this regard are less than significant.

Mitigation Measures: No mitigation measures are required.



Level of Significance: Less than significant impact.

DEGRADE SCENIC RESOURCES FROM A DESIGNATED SCENIC HIGHWAY

5.3-4 THE PROPOSED PROJECT WOULD NOT SUBSTANTIALLY DAMAGE SCENIC RESOURCES, INCLUDING BUT NOT LIMITED TO, TREES, ROCK OUTCROPPINGS, AND HISTORIC BUILDINGS WITHIN A DESIGNATED SCENIC HIGHWAY.

Impact Analysis: California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. Eureka Way (SR-299) is located to the south of the proposed Project. Although this highway has been determined eligible for listing as an Officially Designated State Scenic Highway in the California Scenic Highway System, this corridor is not officially designated as a State Scenic Highway.

As discussed in Viewpoint 3 above (refer to Figure 5.3-5b, VIEWPOINT 3, PROPOSED CONDITION), views toward the Project site from Eureka Way (SR-299) would be limited. Existing vegetated hillsides and topography located off-site would block the majority of the proposed structures from motorists traveling along Eureka Way (SR-299). Also, this portion of Eureka Way (SR-299) is not officially designated as a scenic highway. Therefore, no impacts would result in this regard.

Mitigation Measures: No mitigation measures are required.

Level of Significance: No impact.

LIGHT AND GLARE IMPACTS

5.3-5 THE PROPOSED PROJECT WOULD GENERATE ADDITIONAL LIGHT AND GLARE BEYOND EXISTING CONDITIONS.

Impact Analysis: Implementation of the proposed Project would convert the Project area from a rural setting to a more developed landscape, resulting in new sources of light and glare. New sources of lighting would include the proposed sports park lighting, security lighting, vehicle headlights, other parking lot lighting and lighting that would emanate from the interior of proposed residential units. The proposed Salt Creek Heights Park may be lighted during the evening hours. According to the RMC, §18.40.090, Lighting, the Project would be required to provide for efficient, safe, and attractive outdoor lighting while minimizing nighttime light pollution and spillover. All exterior light fixtures at the proposed park use would be required to be shielded or directed away from adjoining uses, pursuant to all applicable lighting standards and requirements of the RMC. A lighting plan detailing locations, size, height, orientation, and design of lighting associated with the proposed neighborhood park will be required at the time lighting is installed (MM 5.3-5). With implementation of the required mitigation measure and compliance with the RMC, impacts in this regard would be reduced to less than significant levels.

Mitigation Measures:

MM 5.3-5 The City shall ensure that a photometric plan for exterior park lighting does not spill over the property line. All exterior light fixtures at the park shall be shielded or directed away from adjoining uses to prevent light spill and glare, pursuant to all applicable lighting standards and requirements of the RMC.



Level of Significance: Less than significant impact with mitigation incorporated.

CUMULATIVE IMPACTS

5.3-6 PROJECT DEVELOPMENT, TOGETHER WITH CUMULATIVE PROJECTS, MAY RESULT IN SIGNIFICANT LONG-TERM CUMULATIVE AESTHETIC, LIGHT AND GLARE IMPACTS.

Impact Analysis: Future development in accordance with the planned *General Plan* buildout would result in further alteration of the existing rural and natural landscape of the area. As development occurs throughout the Project area, residents and visitors in the area would notice the visual effects of increased development. The significance of these visual and aesthetic changes is difficult to determine, because aesthetic value is subjective and potential impacts are site-specific.

One project (Matrix Subdivision) is currently being proposed within the Project vicinity. This project would subdivide approximately 14 acres for creation of 15 single-family residential lots. No other cumulatively considerable projects are located within the vicinity of the Project site. The aesthetic, light and glare impacts of individual development projects can often be mitigated through careful site design, avoidance of significant visual features, the use of building materials that are consistent with the general character of the area, landscape design, and proper lighting techniques to direct light on-site and away from adjacent properties and compliance with the City's *General Plan* and RMC. Although the Project would cumulatively contribute to the increase in development within the surrounding rural landscape and potentially increase nighttime ambient lighting conditions in the Project area, these resultant impacts are considered less than significant after implementation of MM 5.3-5 and compliance with the City's *General Plan* and RMC.

Other projects currently being planned, in conjunction with the Project, would not significantly cumulatively contribute to the change in topography within the Project area. With implementation of recommended mitigation, compliance with the City's *General Plan* and RMC, as well as other required environmental analyses on a project-by-project basis, cumulatively considerable impacts with regard to aesthetic, light, and glare impacts within the Project area would be reduced to less than significant levels.

Mitigation Measures: Refer to MM 5.3-5.

Level of Significance: Less than significant impact with mitigation incorporated.



5.4 TRAFFIC AND CIRCULATION

This section is based upon the *Salt Creek Heights Traffic Impact Analysis Report* (June 2009) prepared by Omni-Means, which is included as Appendix 15.3, TRAFFIC IMPACT ANALYSIS. The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. The *Traffic Impact Analysis Report* was prepared based on criteria set forth by the City of Redding and the California Department of Transportation (Caltrans). In addition, the *Traffic Impact Analysis Report* included an analysis and discussion of the following items:

- Quantification of the trip generation and trip distribution associated with the proposed Project, and the resulting impacts on existing weekday AM and PM peak-hour intersection and daily roadway segment operations, assuming other regional approved/pending projects are in place;
- The projected Short-Term (Year 2015) and Cumulative (Year 2030) weekday peak-hour intersection and daily roadway segment operations with and without the development of the proposed Project; and
- Potential base improvements and proposed Project-related mitigation measures that are needed to alleviate unacceptable traffic operations at the study intersections and roadway segments.

Mitigation measures are recommended, if necessary, to avoid or lessen proposed Project impacts on traffic and circulation. The following traffic analysis scenarios were evaluated:

- Existing Conditions;
- Year 2015 No Project (Short-Term) Conditions;
- Year 2015 Plus Project (Short-Term) Conditions;
- Year 2030 No Project (Cumulative) Conditions; and
- Year 2030 Plus Project (Cumulative) Conditions.

5.4.1 EXISTING ROADWAY SYSTEM

STREET CLASSIFICATIONS

The City of Redding's existing classification system is comprised of freeways, expressways, major arterials, and collector roadways. The City of Redding *General Plan* designates these functional classifications, which govern engineering design standards and the level of service (LOS) expected of roadways.

- Freeway System. A principal arterial corridor that provides for safe and efficient movement of high volumes of traffic at relatively high speed. An expressway with fully controlled access.
- Expressway System. Excludes freeways. Provides for expeditious movement of large volumes of through traffic between areas and across the City and not intended to provide land access service.
- Major Arterial System. Provides for through traffic movement between areas and across the city and direct access to abutting properties, subject to necessary control of entrances, exits, and curb use.



- Collector Street System. Provides for traffic movement between major arterials and local streets and direct access to abutting properties.
- Local Street System. Provides for direct access to abutting land and for local traffic movements.

LOCAL ACCESS

The existing roadways that provide primary circulation in the vicinity of the proposed Project are as follows:

- North Market Street (SR-273) operates as an arterial from the north end of the Central Business District to Benton Drive and as an expressway from Benton Drive to Interstate (I) 5. SR-273 merges/diverges with I-5 in the south end of the City of Anderson and continues north through downtown Redding until it reaches the north end, where it connects directly to I-5. The facility is primarily a four-lane, divided roadway north and south of the downtown core with a speed limit ranging from 55-60 miles per hour (mph) at its northern and southern sections near I-5, reducing incrementally to 25-35 mph within the downtown core.
- Eureka Way (SR-299) is an interregional highway that begins at United States Route (US) 101 in Humboldt County and traverses east through Humboldt, Trinity, Shasta, and Modoc counties. Within the vicinity of the proposed Project, SR-299 is labeled Eureka Way. Eureka Way (SR-299), from Lower Springs Road to the Cemetery Driveway is a two-lane undivided arterial and from the Cemetery Driveway to its intersection with Market Street (SR-273) in downtown Redding, Eureka Way (SR-299) functions as a four-lane, divided arterial.
- Buenaventura Boulevard is a two-lane divided arterial from Market Street (SR-273) to Placer Street, a two-lane undivided arterial from Placer Street to Eureka Way (SR-299) and a two-lane undivided collector from Eureka Way (SR-299) to its current terminus at Sunflower Drive. The facility provides an alternate connection between Eureka Way (SR-299) and Market Street (SR-273) by avoiding the busy downtown area. The City of Redding *General Plan* shows Buenaventura Boulevard between Eureka Way (SR-299) and Keswick Dam Road to be a two-lane collector. The Project Applicant would be required to develop and improve this facility from west of Sunflower Drive to the proposed Project entrance.
- Placer Street is a four-lane arterial which begins at its intersection with Platina Road/Clearcreek Road/Gas Point Road to the west of the city limits, where it is designated as County Road A16 (Placer Road). Placer Street traverses northeasterly to its terminus at Sequoia Street. Placer Road becomes Placer Street at Swasey Drive. Placer Road is a two-lane, undivided facilities on certain segments. The City of Redding *General Plan* calls for Placer Street between Airpark Drive and Cumberland Drive to be improved to a four-lane arterial.



STUDY LOCATIONS

Study Intersections

The following study intersections, which were established through consultation with City of Redding and Caltrans staff, were analyzed for Existing, Year 2015, and Year 2030 conditions both with and without the proposed Project, during weekday AM and PM peak-hour conditions:

- Eureka Way (SR-299) / Lower Springs Road
- Eureka Way (SR-299) / Buenaventura Boulevard
- Eureka Way (SR-299) / Sunset Drive
- Eureka Way (SR-299) / Overhill Drive
- Eureka Way (SR-299) / Almond Avenue
- Eureka Way (SR-299) / Walnut Avenue / Pioneer Drive
- Eureka Way (SR-299) / Magnolia Avenue
- Eureka Way (SR-299) / 11th Street
- Eureka Way (SR-299) / West Street
- Eureka Way (SR-299) / Court Street
- Court Street / 11th Street
- Eureka Way (SR-299) / California Street
- Eureka Way (SR-299) / Market Street (SR-273)
- Shasta Street / Court Street
- Shasta Street / Market Street (SR-273)
- Shasta Street (SR-44) / Pine Street (SR-273)
- Shasta Street (SR-44) / East Street
- Tehama Street (SR-273) / Market Street (SR-273)
- Tehama Street (SR-44) / Pine Street (SR-273)
- Tehama Street (SR-44) / East Street
- Placer Street / Court Street
- Placer Street / Airpark Drive / Fig Avenue
- Placer Street / Pleasant Street
- Placer Street / Buenaventura Boulevard
- Buenaventura Boulevard / Lakeside Drive

Study Roadways

The following roadway segments were selected in coordination with the City of Redding staff and Caltrans for analysis on an arterial segment operations basis for Existing, Year 2015, and Year 2030 conditions both without and with the proposed Project.

- Eureka Way (SR-299) between Lower Springs Road and Buenaventura Boulevard
- Eureka Way (SR-299) between Buenaventura Boulevard and Court Street

Arterial operations are quantified in terms of the average speed of vehicles traveling through a specific arterial segment.



5.4.2 ANALYSIS METHODOLOGY

ANALYSIS METHODOLOGY

Level of Service (LOS) is essentially a measure of the quality of the overall operating characteristics of a street or highway. Factors involved in determining the LOS include speed, safety, travel time, traffic conflicts and interruptions, freedom to maneuver, driving convenience and comfort, and operating costs. LOS is dependent upon traffic volume and composition of traffic.

Traffic conditions are typically measured through the evaluation of peak-hour LOS that characterize traffic conditions associated with varying levels of traffic. LOS is a measure of congestion that ranges from LOS A (free-flow condition) to LOS F (jammed condition).

INTERSECTION LEVEL OF SERVICE

The signalized study intersections were evaluated using the *Synchro 6.0* (Trafficware) computer software program which uses the methodologies from the *2000 Highway Capacity Manual*. This methodology evaluates the amount of green signal time available to each traffic approach and the total intersection capacity used by the traffic demand and assigns a LOS based on the average control delay which the drivers would experience at the intersection during the peak hour. The LOS criteria for signalized intersections are summarized in Table 5.4-1, LEVEL OF SERVICE CRITERIA - SIGNALIZED INTERSECTIONS.

TABLE 5.4-1
Level of Service Criteria – Signalized Intersections

Level of Service (LOS)	Average Control Delay (Seconds/Vehicle)	Description
A	0 – 10.0	Very low delay. Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	10.1 – 20.0	Generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS "A," causing higher levels of average delay.
C	20.1 – 35.0	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though may still pass through the intersection without stopping.
D	35.1 – 55.0	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 – 80.0	These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80.0	This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.



The LOS for the unsignalized study intersections was evaluated using the Highway Capacity Software (HCS), which uses the methodologies the *2000 Highway Capacity Manual*. This methodology separately evaluates each turning movement that yields to an opposing movement and assigns a LOS. The LOS is based on the average total delays of traffic on the minor approach waiting for an adequate gap in conflicting traffic flows. The LOS criteria for unsignalized intersections are indicated in Table 5.4-2, LEVEL OF SERVICE CRITERIA - UNSIGNALIZED INTERSECTIONS. The LOS for the most delayed movement at each unsignalized intersection, which is also based on the criteria shown in Table 5.4-2, is calculated and reported. When an intersection operates at LOS F and the delay is excessive, HCS does not display a value for the delay. In cases where a value for delay is not reported, the intersection delay is reported as being an overflow (OVRFLW) condition.

**TABLE 5.4-2
 Level of Service Criteria – Unsignalized Intersections**

Level of Service	Average Control Delay (Seconds/Vehicle)	Description
A	0 – 10.0	Little or no delay
B	10.1 – 15.1	Short traffic delay
C	15.1 – 25.0	Average traffic delays
D	25.1 – 35.0	Long traffic delays
E	35.1 – 50.0	Very long traffic delays
F	> 50.1	Extreme delays potentially affecting other traffic movements in the intersection

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

The City of Redding’s LOS standard for local roadways and intersections is LOS C and for intersections within the State Highway System is LOS D.

CALTRANS TRAFFIC IMPACT ANALYSIS GUIDELINES

The Caltrans published *Guide for the Preparation of Traffic Impact Studies* (dated December 2002) states the following:

“Caltrans endeavors to maintain a target LOS at the transition between LOS “C” and LOS “D” on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.”

As described above, the City of Redding uses the LOS C standard for City streets and the LOS D standard for streets and intersections within the State Highway System. Thus, a peak-hour LOS C is taken as the general threshold for acceptable/tolerable operations at the City street study intersections and peak-hour LOS D is taken as the general threshold for acceptable/tolerable operations at the SR-273, Eureka Way (SR-299), and SR-44 study intersections and roadways. Improvements and mitigation measures are recommended for all instances where these LOS standards are not met.



TRAFFIC SIGNAL WARRANTS

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times, they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds impede crossing or turn movements. Signals do not, however, increase the capacity of an intersection. In fact, they often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

Tests for determining whether a traffic signal should be considered for installation have been developed. These tests, called "warrants," consider criteria such as traffic volume, pedestrian volume, presence of school children, and accident history. There are eleven warrants used in the State of California in deciding whether to install a traffic signal. Usually, two or more warrants must be met before a signal is installed. Warrant #3 is for Peak Hour Volumes. An intersection meets Warrant #3 when peak-hour volumes on the major street and the minor street exceed specified values for any one hour of an average day. When an intersection meets Warrant #3, there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate, as described in the *2003 Manual of Uniform Traffic Control Devices (MUTCD)* and the California supplement to the 2003 MUTCD. In areas with populations of less than 10,000 or at locations where speeds on an uncontrolled intersection approach are greater than 40 miles per hour (mph), a rural peak hour warrant is used for evaluation. At all other locations, an urban warrant is used for evaluation.

The *Traffic Impact Analysis Report* for the proposed Project utilized the Peak-Hour-Volume based Warrant #3 as one representative type of traffic signal warrant analysis. It should be noted that the Peak-Hour-Volume based Warrant #3 was only applied when the intersection was found to be operating at unacceptable LOS. Therefore, there may be instances when the unsignalized intersection operates at acceptable LOS conditions or better but still meets the Peak-Hour Volume Warrant.

5.4.3 EXISTING CONDITIONS

EXISTING TRAFFIC VOLUMES

Existing traffic counts for all intersections were conducted in May and September 2007. Existing traffic signal timings were obtained from Caltrans for all state route intersections. The AM peak-hour is defined as the one continuous hour of peak traffic flow counted between 7:00 a.m. and 9:00 a.m., and the PM peak-hour is defined as the one continuous hour of peak traffic flow counted between 4:00 p.m. and 6:00 p.m. under typical weekday conditions. Roadway average daily traffic (ADT) counts at all roadway segments were collected in May 2007. Bicycle and pedestrian counts were not collected since the bicycle and pedestrian volumes can be expected to be very low at the study intersections. The existing traffic counts are included in Appendix 15.3, TRAFFIC IMPACT ANALYSIS, of this EIR.

EXISTING TRAFFIC OPERATIONS

Existing conditions were simulated by using existing intersection and roadway traffic volumes.

Intersections

The existing intersection LOS was based on the methodology previously discussed. Existing AM and PM peak-hour intersection traffic operations were analyzed utilizing existing traffic volumes, shown on Figure



5.4-1, EXISTING PEAK-HOUR INTERSECTION TRAFFIC VOLUMES, and Figure 5.4-2, EXISTING INTERSECTION LAND GEOMETRICS AND CONTROLS. The results of this analysis are shown in Table 5.4-3, EXISTING CONDITIONS - INTERSECTION LEVEL OF SERVICE.

As shown in Table 5.4-3, five intersections currently operate at unacceptable LOS. The intersections are discussed in detail below and, where appropriate, recommended improvements are provided.

Eureka Way (SR-299)/Sunset Drive: This Two-Way-Stop Controlled intersection is currently operating at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria. The recommended improvement is to signalize the intersection, which would allow it to operate at LOS A.

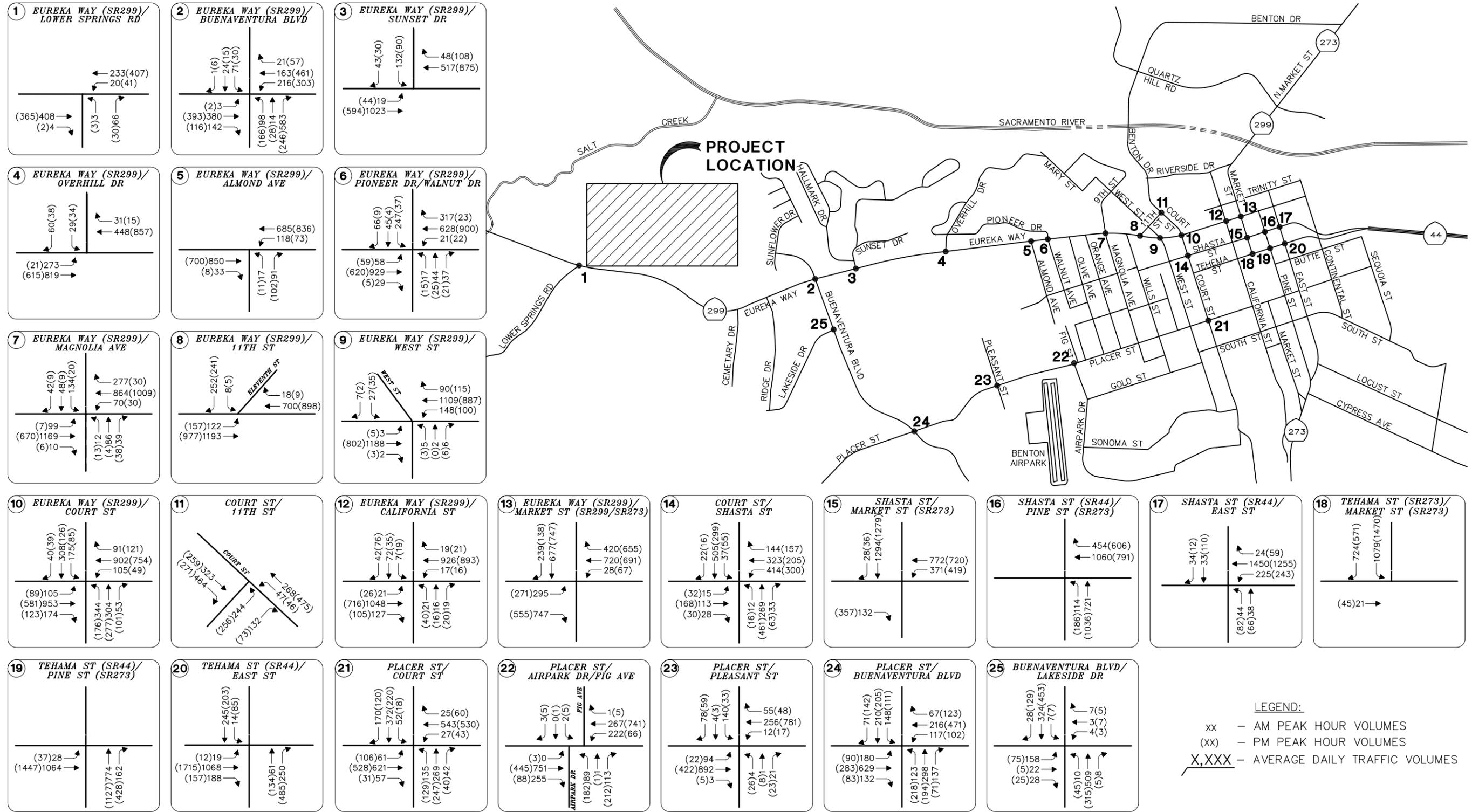
Eureka Way (SR-299)/West Street: This Two-Way-Stop Controlled intersection is currently operating at unacceptable LOS F during the AM and PM peak-hour, but does not meet the signal warrant criteria. The *Traffic Impact Analysis Report* recommended improvements of controlling access by modifying the intersection to prohibit left-turn movements from northbound and southbound West Street onto Eureka Way (SR-299). The *Traffic Impact Analysis Report* projected that with the improvements, the intersection would operate at acceptable LOS D. During the preparation of the *Traffic Impact Analysis Report*, an island was constructed at the intersection of Eureka Way (SR-299) and West Street that provided the above mentioned circulation improvements.

Eureka Way (SR-299)/Court Street: This signalized intersection is currently operating at unacceptable LOS F during the AM and PM peak-hour. The recommended improvements include the following:

- Widen eastbound Eureka Way (SR-299) to include one left-turn lane, two through lanes, and one shared through/right-turn lane. This improvement can be implemented by lengthening and re-striping the existing eastbound right-turn lane. In addition, eastbound Eureka Way (SR-299), east of Court Street, would need to be widened to add an additional eastbound lane.
- Widen westbound Eureka Way (SR-299) to include one left-turn lane, two through lanes, and one shared through/right-turn lane. This improvement can be implemented by lengthening and re-striping the existing westbound right-turn lane. In addition, westbound Eureka Way (SR-299), west of Court Street, would need to be widened to add an additional westbound lane.
- Re-stripe northbound Court Street to include one left-turn lane, one shared through/left-turn lane, and one exclusive right-turn lane. Operate split phasing on the signal for the northbound and southbound Court Street approaches.
- Increase the cycle length and optimize signal timings.

Following these improvements, operations would improve to acceptable LOS D.

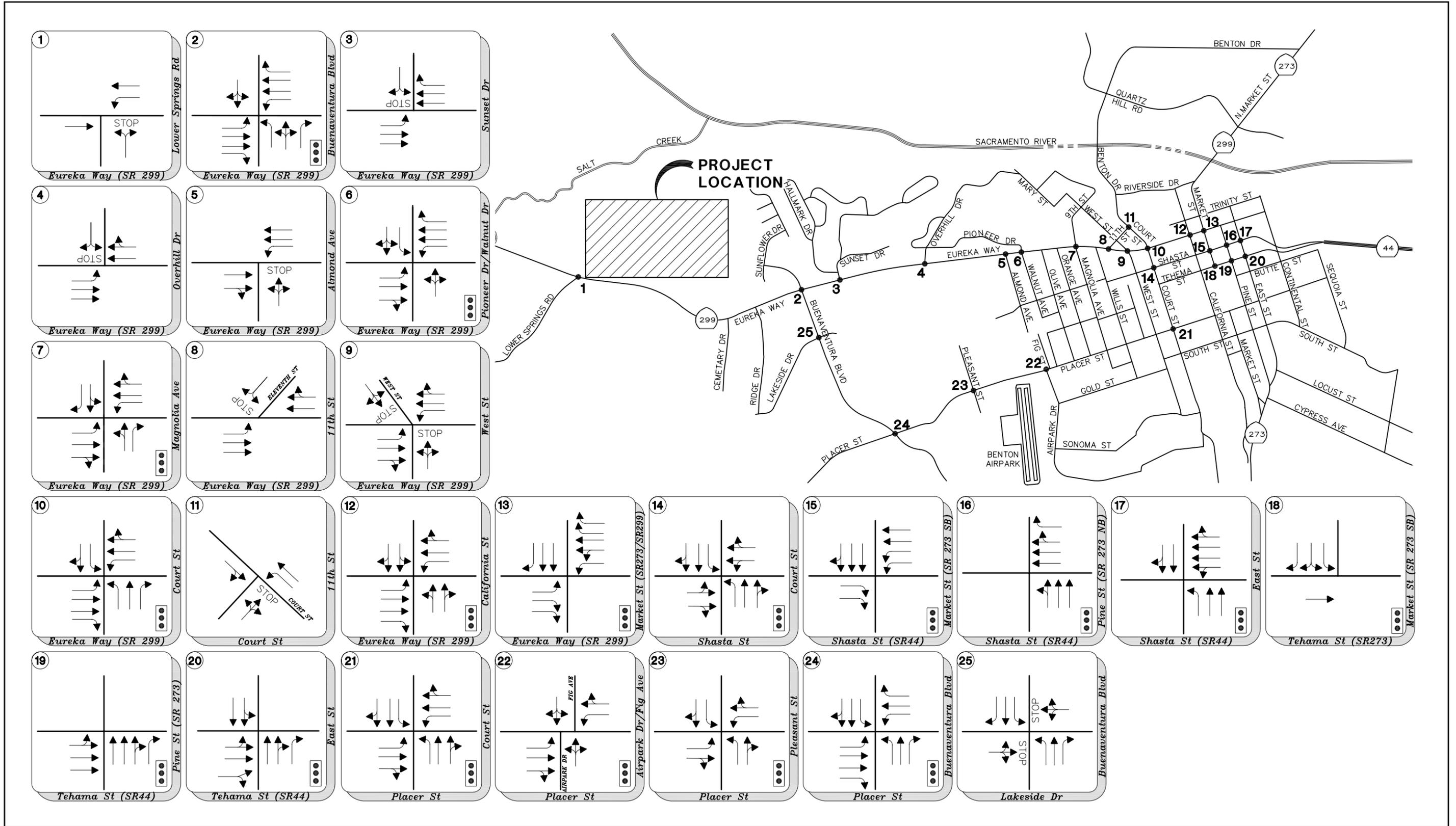
Court Street/11th Street: This Two-Way-Stop Controlled intersection is currently operating at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria. The recommended improvement is to signalize the intersection. This would improve operations to acceptable LOS C during the AM peak-hour and LOS B during the PM peak-hour.



Source: OMNI-MEANS, 12/14/07.

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Existing Peak-Hour Intersection Traffic Volumes



Source: OMNI-MEANS, 12/14/07.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR
**Existing Intersection
 Lane Geometrics and Controls**

Figure 5.4-2



TABLE 5.4-3
Existing Conditions - Intersection Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Eureka Way (SR-299)/Lower Springs Rd.	TWSC	D	12.1	B	-	11.7	B	-
2	Eureka Way (SR-299)/Buenaventura Blvd.	Signal	D	20.2	C	-	20.3	C	-
3	Eureka Way (SR-299)/Sunset Drive	TWSC	D	75.5	F	Yes	95.0	F	Yes
4	Eureka Way (SR-299)/Overhill Drive	TWSC	D	19.4	C	-	18.2	C	-
5	Eureka Way (SR-299)/Almond Avenue	TWSC	D	17.1	C	-	13.9	B	-
6	Eureka Way (SR-299)/Walnut Avenue/Pioneer Drive	Signal	D	17.7	B	-	11.3	B	-
7	Eureka Way (SR-299)/Magnolia Avenue	Signal	D	24.9	C	-	9.5	A	-
8	Eureka Way (SR-299)/11 th Street	TWSC	D	17.9	C	-	21.0	C	-
9	Eureka Way (SR-299)/West Street	TWSC	D	287.1	F	No	71.4	F	No
10	Eureka Way (SR-299)/Court Street	Signal	D	272.2	F	-	92.6	F	-
11	Court Street/11th Street	TWSC	C	509.2	F	Yes	293.4	F	Yes
12	Eureka Way (SR-299)/California Street	Signal	D	15.0	B	-	15.1	B	-
13	Eureka Way (SR-299)/Market Street (SR-273/SR-299)	Signal	D	28.5	C	-	27.7	C	-
14	Shasta Street/Court Street	Signal	C	31.2	C	-	27.4	C	-
15	Shasta Street/Market Street(SR-273)	Signal	D	26.0	C	-	26.0	C	-
16	Shasta Street (SR-44)/Pine Street (SR-273)	Signal	D	18.8	B	-	21.9	C	-
17	Shasta Street (SR-44)/East Street	Signal	D	8.5	A	-	14.8	B	-
18	Tehama Street (SR-273)/Market Street (SR-273)	Signal	D	1.2	A	-	2.6	A	-
19	Tehama Street (SR-44)/Pine Street (SR-273)	Signal	D	10.0	A	-	17.9	B	-
20	Tehama Street (SR-44)/East Street (SR-273)	Signal	D	19.6	B	-	28.5	C	-
21	Placer Street/Court Street	Signal	C	27.1	C	-	26.7	C	-
22	Placer Street/Airpark Drive/Fig Avenue	Signal	C	24.0	C	-	29.2	C	-
23	Placer Street/Pleasant Street	Signal	C	26.0	C	-	24.1	C	-
24	Placer Street/Buenaventura Blvd.	Signal	C	26.7	C	-	29.2	C	-
25	Buenaventura Boulevard/Lakeside Drive	TWSC	C	79.6	F	No	31.1	D	No

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

Notes: **Bolded entries indicate intersections operating at deficient LOS.**

TWSC = Two Way Stop Control

LOS = worst case movement's LOS for TWSC intersections

Warrant = MUTCD Peak hour volume based signal warrant

Buenaventura Boulevard/Lakeside Drive: This Two-Way-Stop-Controlled intersection is currently operating at unacceptable LOS F during the AM peak-hour and LOS D during the PM peak-hour and does not meet the signal warrant criteria. This intersection is projected to meet the signal warrant criteria under the Year 2030 conditions. The recommended improvement is to signalize the intersection which would improve operations to acceptable LOS A.

Roadways

Existing daily traffic operations along roadway segments were analyzed by evaluating operations along Eureka Way (SR-299). Table 5.4-4, EXISTING CONDITIONS - EUREKA WAY (SR-299) ROADWAY LEVEL OF SERVICE contains a summary of the existing roadway segment LOS conditions.



TABLE 5.4-4
Existing Conditions - Eureka Way (SR-299) Roadway Level of Service

Eureka Way (SR-299) Roadway Segment - Eastbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
					Lower Springs Rd. to Buena Ventura Blvd.	D	Two to Four Lane Arterial	II
Buena Ventura Blvd. to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	30.1	B	33.5	B

Eureka Way (SR-299) Roadway Segment - Westbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
					Lower Springs Road to Buena Ventura Blvd.	D	Two to Four Lane Arterial	II
Buena Ventura Blvd. to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	31.9	B	34.2	B

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.
1) Analysis conducted for 2-lane, 3-lane, and 4-lane segments per existing configuration.

As indicated in Table 5.4-4, on an entire corridor basis Eureka Way (SR-299) between Lower Springs Road and Court Street is operating at an acceptable LOS.

5.4.4 REGULATORY FRAMEWORK

CITY OF REDDING GENERAL PLAN

Traffic analysis in the State of California is guided by policies and standards set at the state level by Caltrans and at the local level by local jurisdictions (i.e., the City of Redding). The proposed Project would be subject to the City of Redding transportation policies. Transportation goals and policies are discussed within the City of Redding *General Plan*. The goals and policies that apply to the proposed Project are discussed below in Table 5.4-5, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR TRANSPORTATION.

5.4.5 PROJECTED TRAFFIC

APPROVED / PENDING PROJECTS

City staff provided a list of land development projects within the vicinity of the proposed Project that were regarded as “approved” or “pending approval” for construction in the near-term and are referred to as “short term” projects. These projects include the following:

The West Ridge Master Plan is a pending project located in the westernmost portion of the City of Redding and encompasses approximately 400 acres of vacant land bounded by a short section of Placer Street at the extreme northwest corner of the site, and by a few hundred feet of Power Line Road at the southwest corner of the site. The project is expected to include 296 single-family residential units.



TABLE 5.4-5
Consistency Analysis with City of Redding
General Plan Goals and Policies for Transportation

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Transportation Element</u></p> <p>Goal T1: Coordinate transportation and land use planning; protect existing and planned land uses from transportation-related conflicts; promote multimodal transportation options.</p>	<p>While this EIR analyzes the proposed Project's consistency with the City of Redding <i>General Plan</i>, pursuant to CEQA §15125(d), the City of Redding Planning Commission and/or City Council will ultimately make the determination of the proposed Project's consistency with the City of Redding <i>General Plan</i>.</p> <p>The proposed Project would increase traffic in sufficient volumes to cause LOS to decline below City standards at certain locations. Mitigation measures are provided to maintain acceptable LOS levels.</p>
<p>Policy T1A: Establish the following peak-hour LOS standards for transportation planning and project review. They reflect the special circumstances of various areas of the community, as depicted in Figure 2-1:</p> <ul style="list-style-type: none"> • Use LOS "C"—"acceptable delays"—for most arterial streets and their intersections. • Use LOS "D"—"tolerable delays"—for the Downtown area where vitality, activity, and pedestrian and transit use are primary goals. • Use LOS "D"—"tolerable delays"—for streets within the State highway system and interchanges. • Use LOS "D"—"tolerable delays"—for river-crossing street corridors whose capacity is affected by adjacent intersections. 	<p>A <i>Traffic Impact Analysis Report</i> has been prepared for the proposed Project. The analysis focuses on potential impacts to roadways and intersections consistent with the City of Redding <i>General Plan</i> transportation objectives and policies.</p> <p>Development of the proposed Project and all other approved and pending development would increase traffic at sufficient volume to cause the LOS to decline below City standards under Year 2030 conditions for some roadway segments and intersections. Mitigation measures are provided which would accommodate traffic volume increases.</p>
<p>Policy T1B: Require development projects to construct both on- and off-site improvements as necessary to mitigate the effects of increased traffic generated by the project and maintain peak-hour LOS standards established by Policy T1A. The traffic analysis used to establish mitigating measures shall be based on the City's Traffic Model or other City-approved method. Improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvement needed, costs, funding sources, and other pertinent data required by the City.</p>	<p>The proposed Project would be developed consistent with the Redding Municipal Code (RMC) and City of Redding Construction Standards. Additionally, mitigation measures are provided to accommodate bicycle and transit facilities.</p>
<p>Goal T3: Build and maintain a safe and efficient local street system with the aim of meeting LOS standards.</p> <p>Policy T3A: Establish a system of street cross-sections that will:</p> <ul style="list-style-type: none"> • Accommodate all improvements necessary to handle forecasted volumes at adopted LOS standards. • Accommodate bicycles and transit facilities. • Attain the design objectives for streets as addressed in the Community Development and Design Element. 	<p>The proposed Project would be developed consistent with the RMC and City of Redding Construction Standards.</p>
<p>Policy T3B: Require streets to be dedicated and improved in accordance with adopted street standards; allow modifications to standard street sections when approved by the Planning Commission and City Engineer.</p>	<p>The proposed Project would be developed consistent with the RMC and City of Redding Construction Standards.</p>



TABLE 5.4-5 (Continued)
Consistency Analysis with City of Redding
General Plan Goals and Policies for Transportation

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy T3C:</i> Maximize intersection and driveway spacing on arterial and collector streets. Require shared/common driveways wherever feasible.</p> <p><i>Policy T3F:</i> Assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment), and alternative sources of funding for the improvements can be obtained to offset foregone revenues.</p>	<p>The proposed Project would place two entrances on Eureka Way (SR-299), spaced approximately 2,375 feet apart. The proposed Project would have one entrance on the Buenaventura Boulevard extension.</p> <p>As required by the RMC, the Project Applicant is required to pay the Redding Citywide TIF. The TIF is used for projects throughout the City as identified in the City's Capital Improvement Plan (CIP).</p>
<p><i>Goal T4:</i> Ensure interagency and regional coordination with regard to transportation planning and improvements.</p> <p><i>Policy T4B:</i> Work closely with Caltrans and the RTPA to ensure that State facilities which go through the City, including Eureka Way (SR-299), SR-44, SR-273, I-5, and intersections/interchanges that involve those facilities, are maintained at an acceptable LOS as defined in this element.</p>	<p>The Project Applicant shall participate in the Redding Citywide TIF, to help fund the improvements required to allow state facilities and intersection to operate at acceptable LOS D.</p>
<p><i>Goal T5:</i> Protect residential neighborhoods from excessive through traffic, where feasible.</p> <p><i>Policy T5A:</i> Develop neighborhood protection plans when traffic studies or monitoring confirm excessive traffic volumes, substantial through traffic, speeding, or accidents in specific residential areas.</p>	<p>The proposed Project will be developed consistent with the RMC and City of Redding Construction Standards to ensure acceptable local street traffic volumes.</p>
<p><i>Policy T5C:</i> Establish street design standards and review criteria intended to avoid the creation of local streets that will encourage excessive speed and/or which will ultimately function as collectors. Factors that may contribute to a local street functioning as a collector include:</p> <ul style="list-style-type: none"> • Excessive length (typically greater than one-half mile). • Excessive width. • The lack of other streets which may be used to convey traffic to nearby arterials. 	<p>The proposed Project would be developed consistent with the RMC and City of Redding Construction Standards. The proposed Project provides three connections to arterial streets via three separate roadways that intersect within the development (Figure 5.4-7). These two way streets would vary between 32 to 40-foot wide and are designed in accordance with City of Redding Construction Standards for local roadways which would prohibit excessive speeding and prohibit the use of the streets as collectors.</p>
<p><i>Policy T5D:</i> Encourage new neighborhoods to incorporate detached sidewalks and to establish landscape "parkways" between the curb and sidewalk. Continuous and consistent tree-planting to form canopy closure is encouraged.</p>	<p>The proposed Project would be developed consistent with City of Redding Construction Standards that allow for sidewalks. The proposed Project would provide 6.5-foot landscaped buffers between the roadway and five-foot sidewalks on interior streets.</p>
<p><i>Goal T6:</i> Provide an attractive, safe, and continuous system of sidewalks and other pedestrian facilities.</p>	<p>The proposed Project would be developed consistent with the RMC and City of Redding Construction Standards to ensure acceptable local street traffic volumes.</p>



TABLE 5.4-5 (Continued)
Consistency Analysis with City of Redding
General Plan Goals and Policies for Transportation

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy T6B:</i> Require new development to provide sidewalks or other pedestrian-dedicated facilities on both sides of new public streets. Exceptions may be appropriate where topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.</p>	<p>The proposed Project would be developed consistent with City of Redding Construction Standards that allow for this type of sidewalk. The proposed Project includes 6.5-foot landscaped buffers and five-foot sidewalks on both sides of the interior streets with the 60-foot right-of-way (ROW).</p>
<p><i>Policy T6F:</i> Require all new or renovated pedestrian facilities to be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the needs of the physically disabled.</p>	<p>The proposed Project would be developed consistent with the RMC and City of Redding Construction Standards. The Project identifies five-foot sidewalks on interior roadways and a 10-foot sidewalk on one side of the Buenaventura Boulevard extension.</p>
<p><i>Goal T8:</i> Make it easier and safer for people to travel by bicycle.</p>	
<p><i>Policy T8G:</i> Require new development to provide bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bicycle Plan.</p>	<p>The proposed Project would be developed consistent with the City of Redding Parks, Trails and Open Space Master Plan. The proposed Project would contain 32 to 40-foot wide two way street sections which would not prohibit bicycle use on these interior roadways.</p>
<p><i>Goal T9:</i> Promote and maintain a public transit system that is safe, efficient, cost effective, and responsive to the needs of the residents.</p>	
<p><i>Policy T9D:</i> Require development to install passenger amenities at designated bus stops when identified as a mitigation measure.</p>	<p>Not applicable to this Project.</p>
<p>Source: <i>City of Redding General Plan, 2000.</i></p>	



The Matrix Subdivision is an approved project that includes a General Plan Amendment, rezoning, and tentative subdivision map. The project site is located north of Eureka Way (State Route 299), approximately 0.25 miles west of the intersection with Buenaventura Boulevard. The tentative subdivision map application is a request to subdivide approximately 14 acres for creation of 15 single-family residential lots on property located at 4050 and 4090 Eureka Way.

Shasta College Health Sciences and University Center is an approved project consisting of a 43,800 square foot, two story building. Shasta Community Health and the college both have their dental programs housed on the first floor. The site also houses the college's nursing program on the second floor, including the University Center meeting spaces and faculty office space.

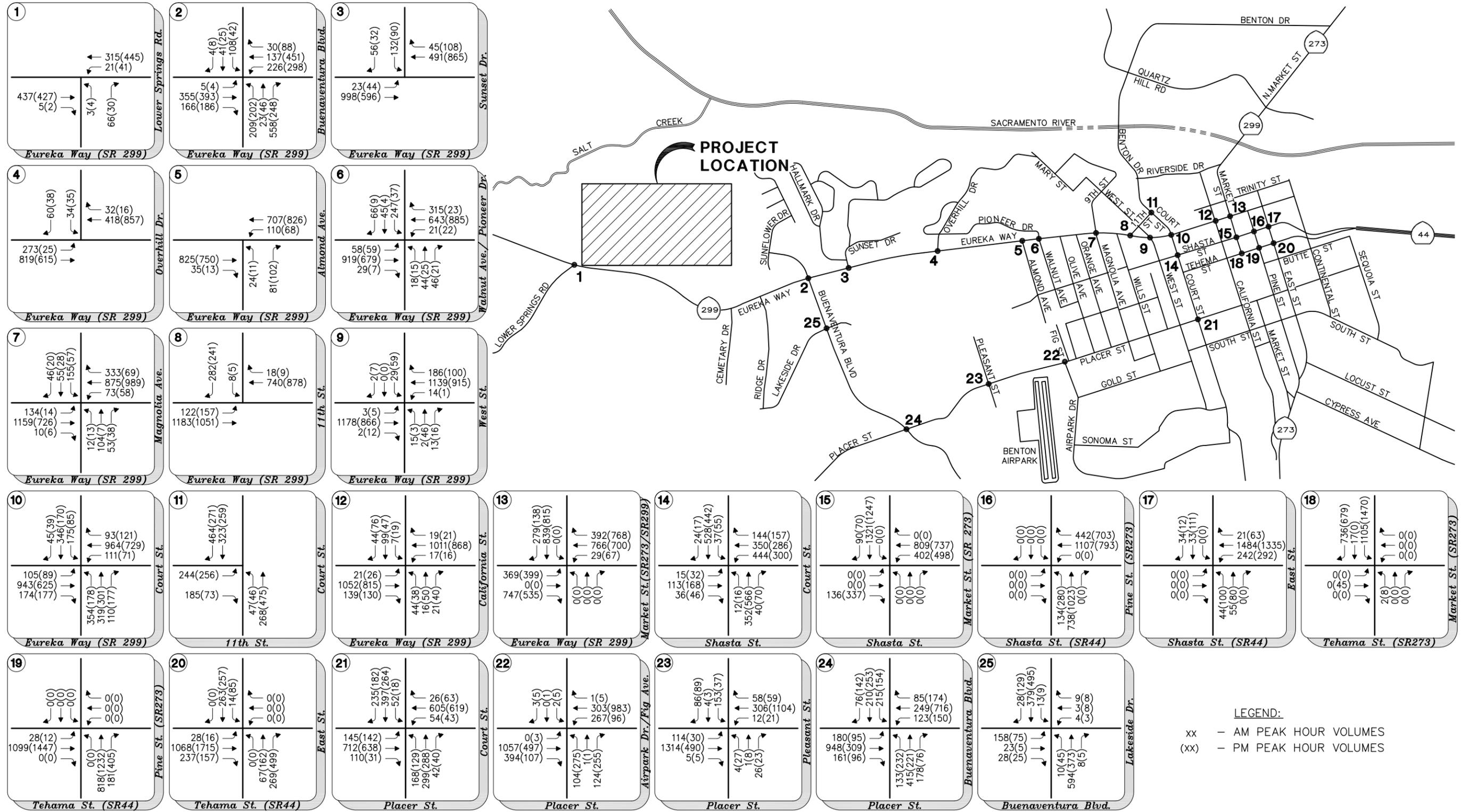
The Shasta County Regional Travel Demand Forecast (SCRTDF) Model was checked and updated as necessary to account for trips from all approved/pending development. Trip generation estimates and trip distribution patterns for the approved/pending projects were assigned by the SCRTDF Model. It is noted that there is a shift in traffic distribution patterns following improvements to Placer Street, as a result of which Year 2015 No Project volumes at some locations on Eureka Way (SR-299) could be less than existing traffic volumes.

PROJECT TRIP GENERATION

Year 2015 (short-term) and Year 2030 (cumulative) project development assumptions were made in consultation with the Project Applicant. Short term development of the proposed Project would include Phases 1 through 5, and is expected be completed by Year 2015 (Plus Project Conditions). Thus, Year 2015 development of the proposed Project would include 257 single-family units and 24 multi-family units. The proposed neighborhood park would also be assumed to be completely laid out and fully functional under Year 2015 Plus Project conditions.

Cumulative development of the proposed Project would include Phases 6, 7, and 8, expected to be completed by Year 2030 (Plus Project Conditions). Following completion of Year 2030 development (i.e., full build-out), the proposed Project is expected to include a total of approximately 440 residential units: 344 single-family units and 96 multi-family units. Year 2015 No Project peak-hour traffic conditions were simulated by superimposing new trips generated by the approved/pending projects over existing base traffic volumes at the study intersections. The resulting Year 2015 No Project intersection and roadway traffic volumes are shown on Figure 5.4-3, YEAR 2015 NO PROJECT PEAK-HOUR INTERSECTION TRAFFIC VOLUMES.

Project trip generation has been estimated utilizing trip generation rates contained in the Institute of Transportation Engineers (ITE) Publication *Trip Generation (Seventh Edition)*. Table 5.4-6, YEAR 2015 CONDITIONS - PROJECT TRIP GENERATION, and Table 5.4-8, YEAR 2030 CONDITIONS - PROJECT TRIP GENERATION, show the Year 2015 and Year 2030 Trip Generation estimates from the proposed Project. An internal trip reduction (match) of three percent (3%) was used for trip generation estimates for residential uses, while an internal trip reduction of 50% was applied to raw trips generated from the park. These internal trip reduction percentages were established in consultation with the City of Redding, and are applied to the unadjusted trips being generated from single-family units alone.



Source: OMNI-MEANS, 12/14/07.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
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Year 2015 No Project Peak-Hour Intersection Traffic Volumes



**TABLE 5.4-6
Year 2015 Conditions - Project Trip Generation**

ITE Land Use Category (ITE Code)	Unit	Weekday Daily Trip Rate/Unit	Weekday AM Peak Rate/Unit			Weekday PM Peak Rate/Unit		
			Total	In	Out	Total	In	Out
Single-Family Detached Housing (210)	per d.u.	9.64	0.74	25%	75%	0.98	63%	37%
Residential Condominium/Townhouse (230)	per d.u.	7.96	0.67	17%	83%	0.79	67%	33%
Park	per acre	50.00	2.00	80%	20%	4.00	41%	59%
Land Use Description	Quantity	Weekday Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Salt Creek - Single Family Homes	257	2478	189	47	142	251	158	93
Salt Creek - Townhouses	24	191	16	3	13	19	13	6
Total Unadjusted Trips		2669	205	50	155	270	171	99
Internal Trip Reduction between housing types	3%	-74	-6	-1	-5	-8	-5	-3
RESIDENTIAL PORTION - TOTAL		2595	199	49	150	262	166	96
Park	13.0	650	26	21	5	52	21	31
Internal Trip Reduction for parks	50%	-325	-13	-11	-2	-26	-11	-15
PARK - TOTAL		325	13	10	3	26	10	16
NET NEW PROJECT TRIPS		2,920	212	59	153	288	176	112

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Trip generation rates based on equations as outlined in the ITE *Trip Gen Manual 7th Edition*.

2) Internal trip reduction is expressed as a percentage of the trip generation from single family homes.

As shown in Table 5.4-6, in the Year 2015, the proposed Project is projected to generate 2,920 weekday ADT with 212 trips occurring during the AM peak-hour and 288 trips occurring during the PM peak-hour. As shown in Table 5.4-7, YEAR 2030 CONDITIONS - PROJECT TRIP GENERATION, below, complete build-out of the proposed Project is expected to generate a total of 4,424 weekday ADT with 330 trips occurring during the AM peak-hour and 431 trips occurring during the PM peak-hour.

**TABLE 5.4-7
Year 2030 Conditions - Project Trip Generation**

ITE Land Use Category (ITE Code)	Unit	Weekday Daily Trip Rate/Unit	Weekday AM Peak Rate/Unit			Weekday PM Peak Rate/Unit		
			Total	In	Out	Total	In	Out
Single-Family Detached Housing (210)	per d.u.	9.41	0.73	25%	75%	0.95	63%	37%
Residential Condominium/Townhouse (230)	per d.u.	6.04	0.47	17%	83%	0.56	67%	33%
Park	per acre	50.00	2	80%	20%	4	41%	59%
Land Use Description	Quantity	Weekday Daily Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Salt Creek - Single Family Homes	350	3292	254	64	190	331	209	122
Salt Creek - Townhouses	150	906	71	12	59	84	56	28
Total Unadjusted Trips		4198	325	76	249	415	265	150
Internal Trip Reduction between housing types	3%	-99	-8	-2	-6	-10	-6	-4
RESIDENTIAL PORTION - TOTAL		4099	317	74	243	405	259	146
Park	13	650	26	21	5	52	21	31
Internal Trip Reduction for parks	50%	-325	-13	-11	-2	-26	-11	-15
PARK - TOTAL		325	13	10	3	26	10	16
NET NEW PROJECT TRIPS		4424	330	84	246	431	269	162

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Trip generation rates based on equations as outlined in the ITE *Trip Gen Manual 7th Edition*.

2) Internal trip reduction is expressed as a percentage of the trip generation from single family homes.



PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The directional trip distribution and assignment of Project-generated trips was derived based on traffic flow patterns shown in the SCRTDF model. Figure 5.4-4, PROJECT TRIP DISTRIBUTION, depicts the direction trip distribution for the proposed Project. Year 2015 conditions "Project-Only" traffic volumes (Figure 5.4-5) and Year 2030 conditions "Project-Only" traffic volumes (Figure 5.4-6) were derived by distributing the Year 2015 and Year 2030 Project generated trips according to the distribution patterns illustrated in Figure 5.4-4.

PROJECT SPECIFIC IMPROVEMENTS

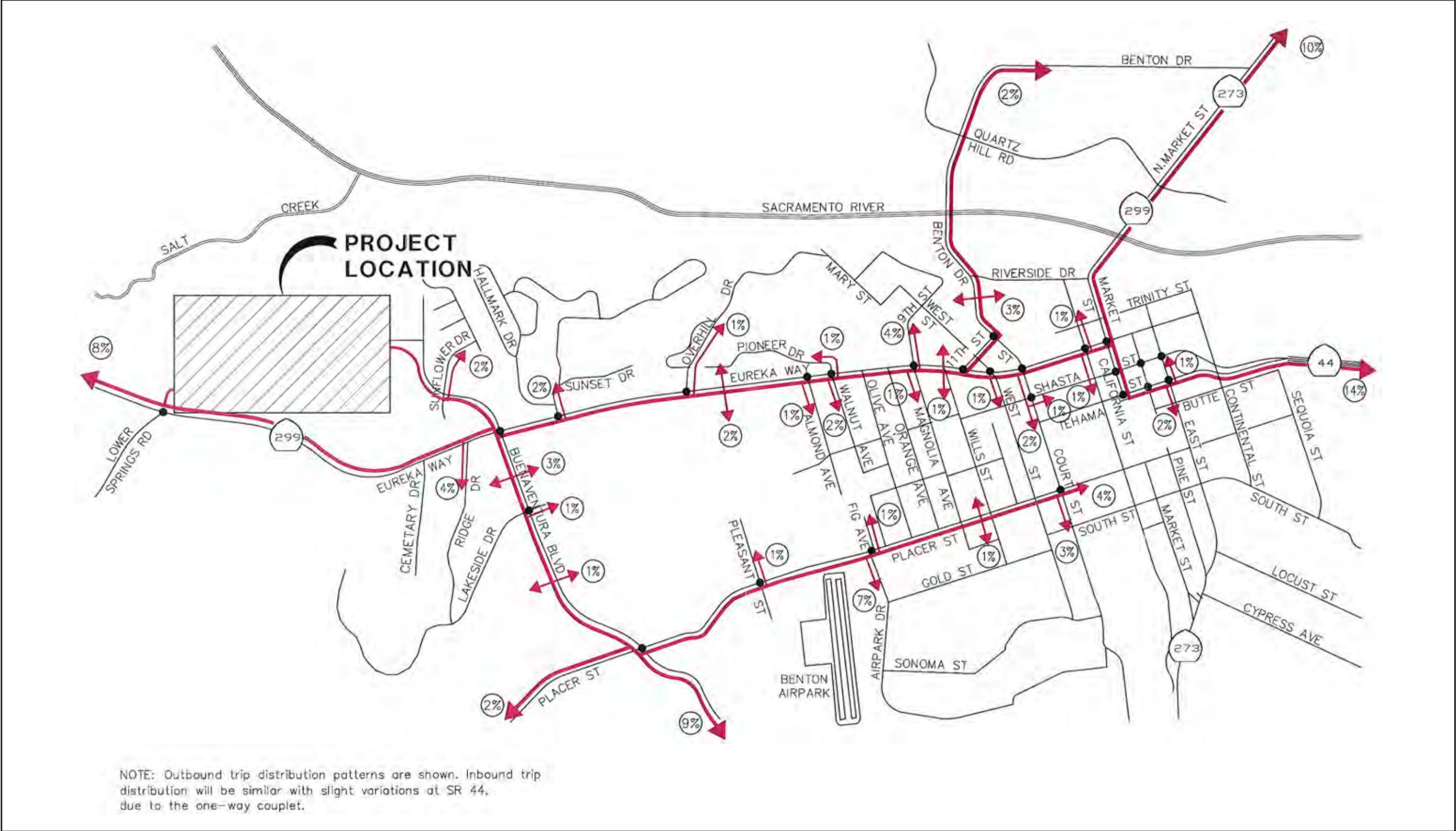
As part of specific improvements associated with the proposed Project, the Project Applicant is required to develop and construct the northern extension of Buenaventura Boulevard, beyond its current terminus with Sunflower Drive. This northern extension would be a two-lane, undivided facility, which would provide the proposed Project with an access approach. Details on this access location and other access approaches are provided below.

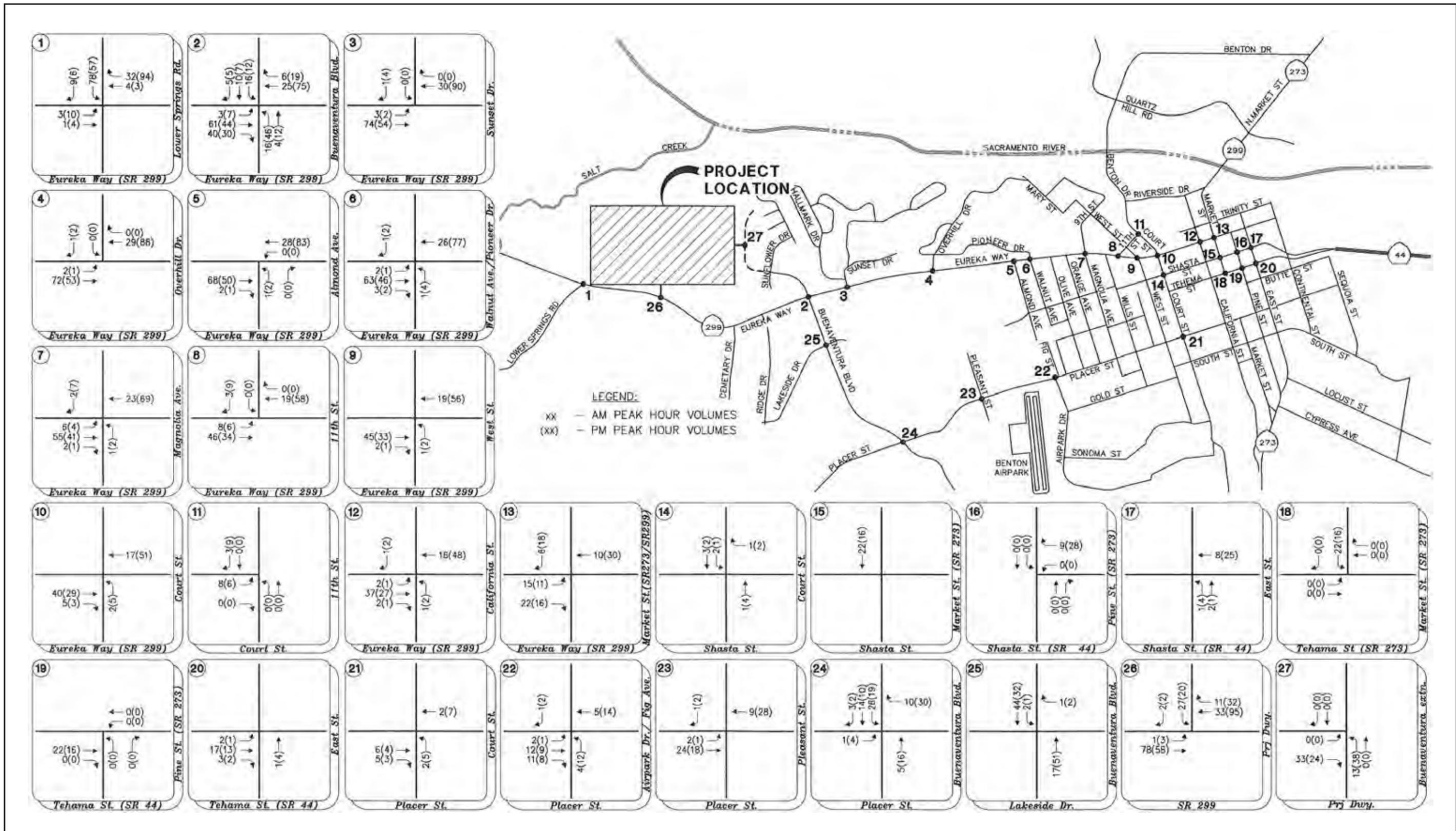
PROJECT SITE ACCESS

As illustrated on Figure 3-4a, SUBDIVISION TENTATIVE MAP, in Section 3.0, PROJECT DESCRIPTION, access to the proposed Project would be provided by three entrances, two of which are on Eureka Way (SR-299), and one of which entails the future extension of Buenaventura Boulevard. These Project access locations are described below:

- The first Project access would be provided from the future extension of Buenaventura Boulevard, and would predominantly serve the eastern portion of the proposed Project site via an internal road, labeled Road O. It is assumed the eastbound approach (Road O, exiting the site) would be constructed to include one shared left/right-turn lane.
- The second Project access location would be approximately 2,375 feet east of the Eureka Way (SR-299)/Lower Springs Road/Road A intersection. As shown on Figure 3-4a, an internal road, labeled Road B, would provide connectivity from this access location to the proposed Project.
- The third Project access location would be on Eureka Way (SR-299), located at the intersection of Eureka Way (SR-299) and Lower Springs Road. An internal road, labeled Road A, would provide access from this location to the proposed Project.

All Project access locations will require improvements in the short-term (Year 2015) and at Project buildout to facilitate safe turning movements. Each access location was assumed as a full access approach, with stop control along the minor approaches. Lane geometrics and control for the three access locations are illustrated on Figure 5.4-7, YEAR 2015 PLUS PROJECT INTERSECTION LANE GEOMETRICS AND CONTROLS.

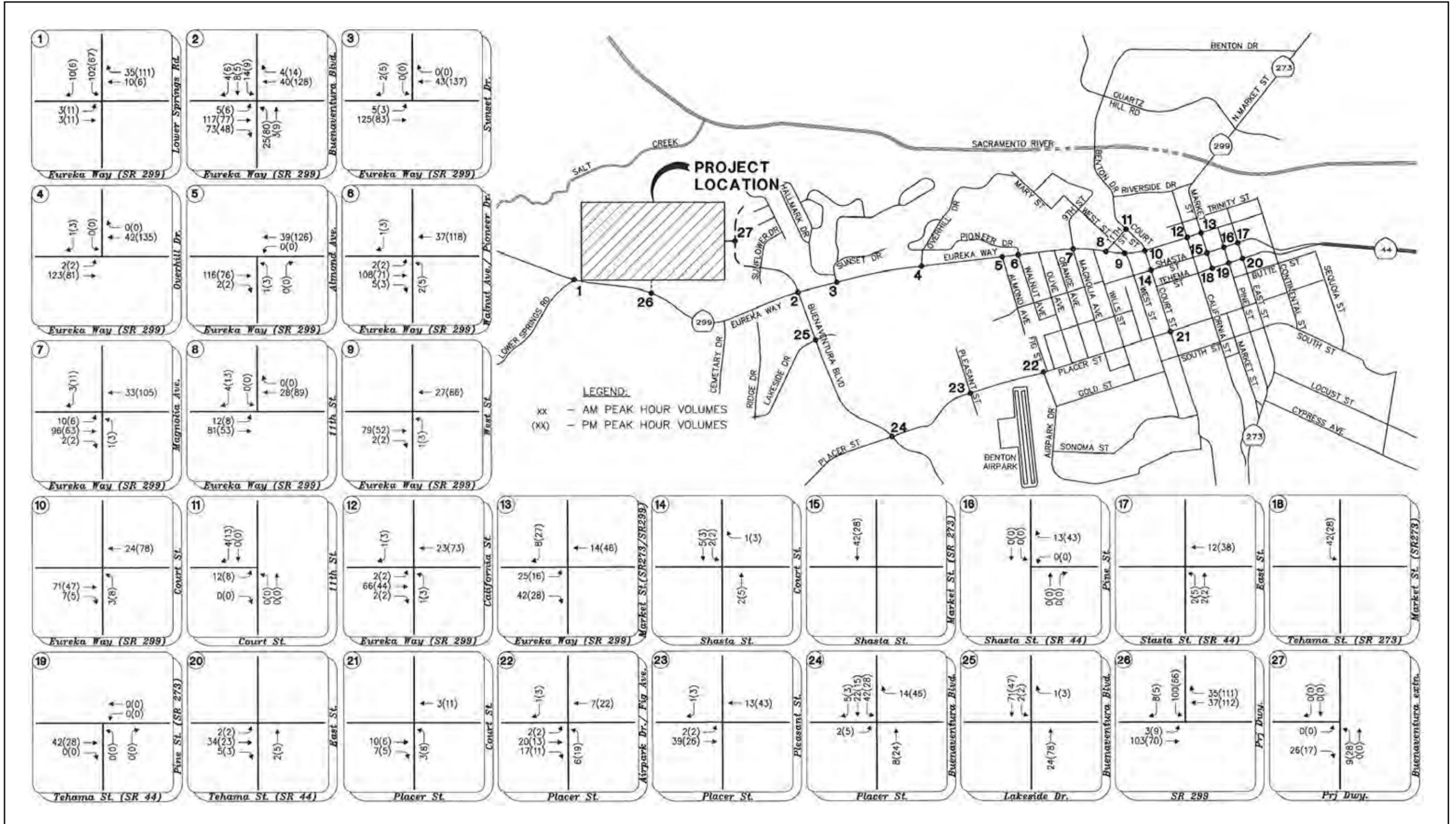




Source: OMNI-MEANS, 7/23/08.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
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Year 2015 "Project Only" Traffic Volumes



Source: OMNI-MEANS, 7/23/08.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Year 2030 "Project Only" Traffic Volumes



5.4.6 YEAR 2015 (SHORT-TERM) CONDITIONS

Year 2015 conditions refer to analysis scenarios which would exist following the assumed completion of approved/pending study area developments, and thus are typically a few years in the future from Existing conditions. Year 2015 conditions assume that some programmed or planned improvements might be completed, including potentially some Project related improvements. The Year 2015 No Project condition investigates traffic operations following completion of approved and pending projects, but excluding development of the proposed Project. The Year 2015 Plus Project condition is the analysis scenario in which traffic impacts associated with the proposed Project are investigated in comparison to the Year 2015 No Project condition.

YEAR 2015 NO PROJECT TRAFFIC OPERATIONS

Year 2015 conditions refer to analysis scenarios that will typically exist a few years in the future from Existing conditions. The Year 2015 No Project condition investigates traffic operations following completion of approved and pending projects in the area and excludes development of the proposed Project.

Intersections

Year 2015 No Project intersection operations were quantified utilizing Existing condition lane geometrics and controls (shown on Figure 5.4-2) and the Year 2015 No Project traffic volumes (shown on Figure 5.4-3). Table 5.4-8, YEAR 2015 NO PROJECT - INTERSECTION LEVEL OF SERVICE, provides a summary of the resulting intersection LOS.

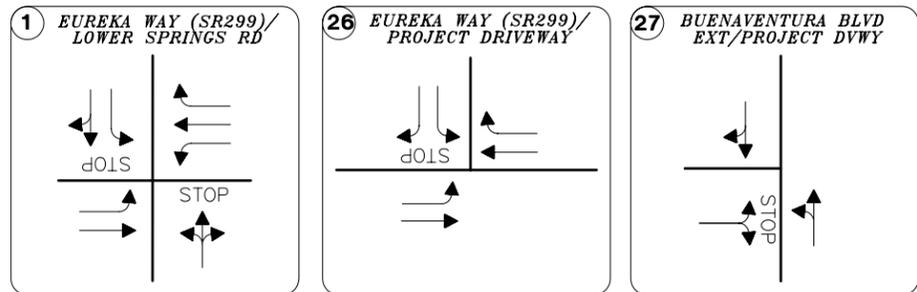
As shown in Table 5.4-8, eight intersections are projected to operate at unacceptable LOS for Year 2015 No Project conditions. These eight intersections are discussed in detail and recommended improvements that would bring LOS to acceptable levels are provided below.

Eureka Way (SR-299)/Sunset Drive: This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria under Year 2015 No Project conditions. The improvements recommended for Existing conditions (signalization) would accommodate Year 2015 No Project conditions.

Eureka Way (SR-299)/West Street: This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria under Year 2015 No Project conditions. The improvements recommended for Existing conditions would accommodate Year 2015 No Project conditions. During the preparation of the *Traffic Impact Analysis Report*, an island was constructed at the intersection of Eureka Way and West Street that provided the recommended circulation improvements.

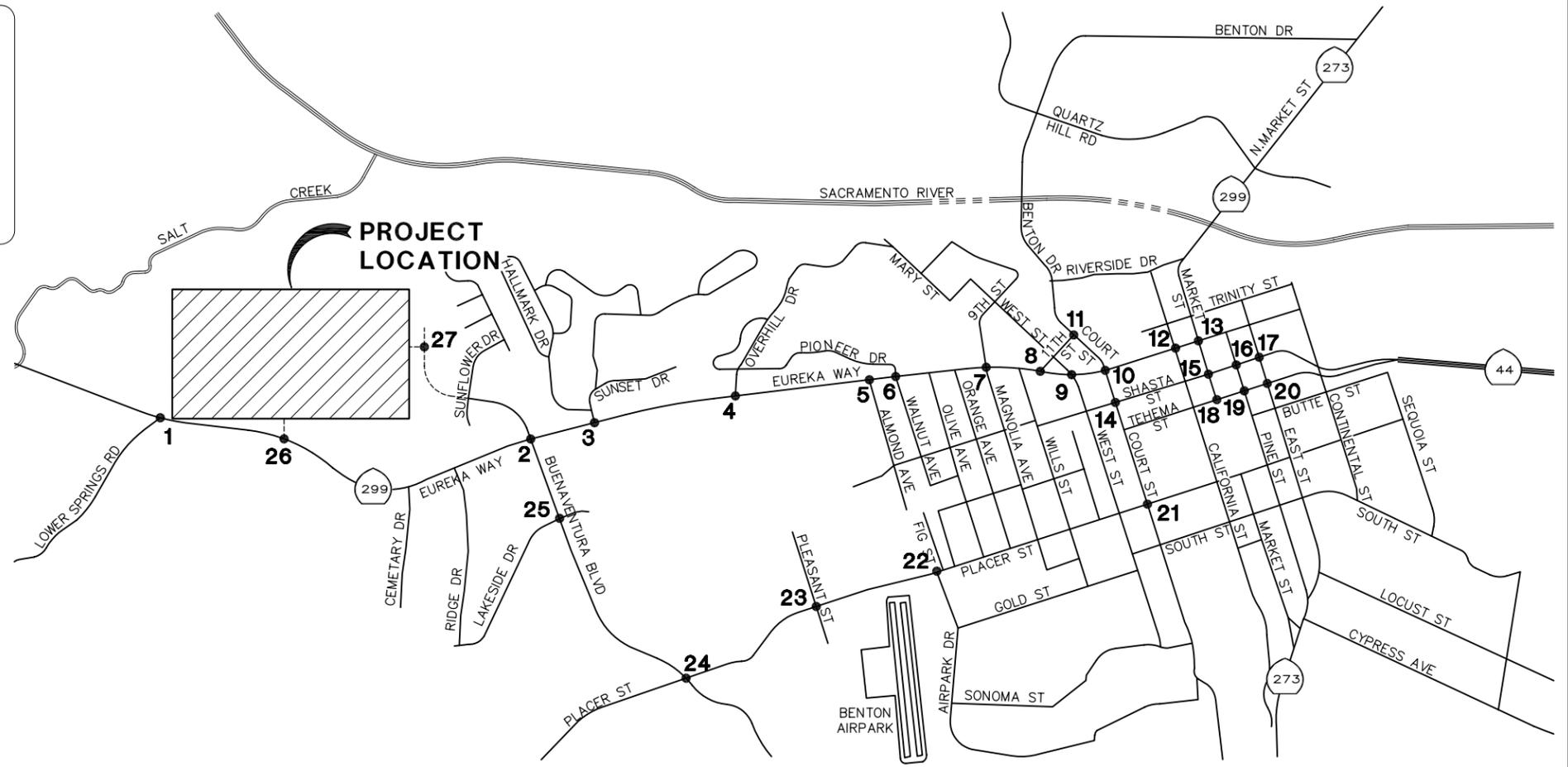
Eureka Way (SR-299)/Court Street: This signalized intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour. The recommended improvements include the following:

- Widen eastbound Eureka Way (SR-299) to include one left-turn lane, three through lanes, and one exclusive right-turn lane. In addition, eastbound Eureka Way (SR-299), east of Court Street, would need to be widened to accommodate an additional eastbound lane.



NOTE: 1. Project developer is responsible for providing appropriate intersection approach improvements at all project access locations.

2. Lane geometrics and control at all other intersections are similar to existing conditions.



Source: OMNI-MEANS, 12/14/07.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR
**Year 2015 Plus Project Intersection
 Lane Geometrics and Controls**



TABLE 5.4-8
Year 2015 No Project - Intersection Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Eureka Way (SR-299)/Lower Springs Rd.	TWSC	D	12.5	B	No	12.8	B	No
2	Eureka Way (SR-299)/Buenaventura Blvd.	Signal	D	23.7	C	-	21.7	C	-
3	Eureka Way(SR-299)/Sunset Drive	TWSC	D	67.7	F	Yes	91.5	F	Yes
4	Eureka Way (SR-299)/Overhill Drive	TWSC	D	20.4	C	No	18.4	C	No
5	Eureka Way (SR-299)/Almond Avenue	TWSC	D	18.0	C	No	14.4	B	No
6	Eureka Way (SR-299)/Walnut Avenue/Pioneer Drive	Signal	D	18.8	B	-	11.3	B	-
7	Eureka Way (SR-299)/Magnolia Avenue	Signal	D	31.5	C	-	13.9	B	-
8	Eureka Way (SR-299)/11 th Street	TWSC	D	20.4	C	-	20.5	C	-
9	Eureka Way (SR-299)/West Street	TWSC	D	414.4	F	No	332.2	F	No
10	Eureka Way (SR-299)/Court Street	Signal	D	276.4	F	-	89.5	F	-
11	Court Street/11th Street	TWSC	C	265.0	F	Yes	201.4	F	Yes
12	Eureka Way (SR-299)/California Street	Signal	D	15.7	B	-	16.4	B	-
13	Eureka Way (SR-299)/Market Street(SR-273/SR-299)	Signal	D	48.4	D	-	51.8	D	-
14	Shasta Street/Court Street	Signal	C	33.9	C	-	29.1	C	-
15	Shasta Street/Market Street(SR-273)	Signal	D	26.4	C	-	26.1	C	-
16	Shasta Street (SR-44)/Pine Street (SR-273)	Signal	D	19.1	B	-	22.9	C	-
17	Shasta Street (SR-44)/East Street	Signal	D	10.6	B	-	19.6	B	-
18	Tehama Street (SR-273)/Market Street (SR-273)	Signal	D	4.8	A	-	2.6	A	-
19	Tehama Street (SR-44)/Pine Street (SR-273)	Signal	D	10.9	B	-	15.1	B	-
20	Tehama Street (SR-44)/East Street (SR-273)	Signal	D	19.8	B	-	28.9	C	-
21	Placer Street/Court Street	Signal	C	33.9	C	-	29.5	C	-
22	Placer Street/Airpark Drive/Fig Avenue	Signal	C	46.3	D	-	74.9	E	-
23	Placer Street/Pleasant Street	Signal	C	63.3	E	-	26.9	C	-
24	Placer Street/Buenaventura Boulevard	Signal	C	45.5	D	-	45.3	D	-
25	Buenaventura Boulevard/Lakeside Drive	TWSC	C	172.4	F	No	41.8	E	No

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

Notes: **Bolded** entries indicate intersections operating at deficient LOS.

TWSC = Two Way Stop Control

LOS = Worst case movement's LOS for TWSC intersections.

Warrant = MUTCD Peak hour volume based signal warrant.

- Widen westbound Eureka Way (SR-299) to include one left-turn lane, three through lanes, and one exclusive right-turn lane. In addition, westbound Eureka Way (SR-299), west of Court Street, would need to be widened to accommodate an additional westbound lane.
- Re-stripe northbound Court Street to include one left-turn lane, one shared through/left-turn lane, and one exclusive right-turn lane. Northbound and southbound Court Street would now operate with split phasing.
- Increase the cycle length and optimize signal timings.

Following these improvements, operations would improve to acceptable LOS D.

Court Street/11th Street: This Two-Way-Stop Controlled intersection is currently operating at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria under Year 2015 No Project conditions. The improvements recommended for Existing conditions (signalization) would accommodate Year 2015 No Project conditions.



Placer Street/Airpark Drive/Fig Avenue: This signalized intersection is projected to operate at unacceptable LOS D under Year 2015 No Project conditions. The recommended improvements include the following:

- Re-stripe westbound Placer Street to include one left-turn lane, one through lane, and one shared through/right-turn lane.
- Widen eastbound Placer Street to include one left-turn lane, two through lanes, and one exclusive right-turn lane.

It is noted that these improvements are included in the City of Redding *General Plan* as a future year improvement. Following these improvements, operations would improve to acceptable LOS C.

Placer Street/Pleasant Street: This signalized intersection is projected to operate at unacceptable LOS E during the AM peak-hour under Year 2015 No Project conditions. The recommended improvement is to improve eastbound and westbound Placer Street to include a single left-turn lane, one through lane, and one shared through/right-turn lane. These improvements are included in the City of Redding *General Plan* as future year improvements and assumed to be in place under Year 2030 conditions. Following these improvements, operations would improve to acceptable LOS B or better.

Placer Street/Buenaventura Boulevard: This signalized intersection is projected to operate at LOS D during the AM and PM peak-hour. The recommended improvements include widening each approach to include one left-turn lane, two through lanes, and one exclusive right-turn lane. All approaches must be provided with free right-turns. Some of these improvements are included as planned improvements in the City of Redding *General Plan*. The improvements have been assumed to be in place under Year 2030 Conditions. Following these improvements operations would improve to acceptable LOS C.

Buenaventura Boulevard/Lakeside Drive: This Two-Way-Stop-Controlled intersection is projected to operate at unacceptable LOS F during the AM peak-hour and LOS E during the PM peak-hour and does not meet the signal warrant criteria under Year 2015 No Project conditions. The improvements recommended for Existing conditions (signalization) would accommodate Year 2015 No Project conditions.

Roadway Segments

Year 2015 No Project daily traffic operations along roadway segments were analyzed by evaluating arterial segment operations along the Eureka Way (SR-299) corridor. Table 5.4-9, YEAR 2015 NO PROJECT - EUREKA WAY (SR-299) ROADWAY LEVEL OF SERVICE, contains a summary of the Year 2015 No Project roadway segment LOS conditions. As shown in Table 5.4-9, on a corridor basis, Eureka Way (SR-299) between Lower Springs Road and Court Street is projected to operate at an acceptable LOS.



TABLE 5.4-9
Year 2015 No Project - Eureka Way (SR-299) Roadway Level of Service

Eureka Way (SR-299) Roadway Segment - Eastbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
					Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	32.3	B	32.7	B

Eureka Way (SR-299) Roadway Segment - Westbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
					Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	30.8	B	33.7	B

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Analysis conducted for 2-lane, 3-lane, and 4-lane segments per existing configuration.

5.4.7 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Environmental impact thresholds as indicated in Appendix G of the State *CEQA Guidelines* are used as significance thresholds in this analysis. As such, a project would create a significant impact if it would:

- 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);
- Exceed, either individually or cumulatively, an LOS standard established by the County Congestion Management agency for designated roads or highways;
- 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 (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT); and/or



- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

CITY OF REDDING THRESHOLDS

Traffic issues related to the proposed Project have been evaluated in the context of CEQA and the City of Redding guidelines. To determine whether the addition of Project-generated trips result in a significant impact at a study intersection or roadway segment and thus requires mitigation, the City utilizes the thresholds of significance discussed below. Therefore, the proposed project would have a significant effect if it:

- Causes a roadway, signalized intersection, or all-way stop-controlled intersection that currently operates at an acceptable LOS to decline to an unacceptable LOS.
- Increases delay by more than five seconds at a signalized intersection that operates or will operate at an unacceptable LOS without the project.
- Increases the volume to capacity (V/C) ratio by more than 0.05 on an arterial roadway segment that operates or will operate at an unacceptable LOS without the project.
- Causes a movement/approach to a two-way stop-controlled intersection that currently operates at an acceptable LOS to decline to an unacceptable LOS and also causes the intersection to meet the peak-hour signal warrant.
- Increases delay by more than five seconds at an unsignalized intersection meeting the peak-hour signal warrant that operates or will operate at an unacceptable LOS without the project.
- Creates a significant impact on local streets based on the standards set out in the City of Redding *General Plan* policies or Subdivision Ordinance, or based on other established standards which, in the consultant's professional judgment, should be applied.

5.4.8 IMPACTS

Traffic and circulation impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.4-1 LOCAL TRAFFIC DELAYS COULD BE EXPERIENCED THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION.

Impact Analysis: Some traffic delays can be expected during Project construction; however, the traffic impacts during construction are temporary in nature and will cease upon completion of construction activities. A Traffic Management Plan (TMP) is required to be developed by the Project Applicant and approved by the City Transportation and Engineering Department prior to the initiation of any construction activities to minimize disruption to existing traffic flow conditions. The TMP addresses details regarding road closures, provisions to maintain access to any adjacent properties, prior notices, adequate sign-posting, detours (including for bicyclists), and permitted hours of construction activity as determined appropriate by the City.



Adequate local and emergency access to adjacent uses is required to be provided at all times. The TMP shall be reviewed and approved by the City Police, County Sheriff, Fire Departments, and other emergency service providers so that construction does not interfere with any emergency response or evacuation plans.

Mitigation Measure: No mitigation measures are required.

Level of Significance: Less than significant impact.

YEAR 2015 PLUS PROJECT TRAFFIC OPERATIONS

5.4-2 **DEVELOPMENT OF THE PROPOSED PROJECT COULD CAUSE AN INCREASE IN TRAFFIC WHICH IS SUBSTANTIAL IN RELATION TO THE EXISTING TRAFFIC LOAD AND CAPACITY OF THE STREET SYSTEM (I.E., RESULTS IN A SUBSTANTIAL INCREASE IN EITHER THE NUMBER OF VEHICLE TRIPS, THE VOLUME TO CAPACITY RATIO ON ROADS, OR CONGESTION AT INTERSECTIONS).**

Impact Analysis: Project trip generation is discussed in Section 5.4.5, PROJECTED TRAFFIC. As shown in Table 5.4-7, the proposed Project under Year 2015 Plus Project conditions, would generate a total of 2,920 weekday daily trips, with 212 weekday daily trips during the AM peak-hour and 288 weekday daily trips during the PM peak-hour. Year 2015 Plus Project conditions were simulated by superimposing traffic generated by the proposed Project onto Year 2015 No Project intersection and roadway traffic volumes. The resulting Year 2015 Plus Project intersection and roadway traffic volumes are illustrated on Figure 5.4-8, YEAR 2015 PLUS PROJECT PEAK-HOUR INTERSECTION TRAFFIC VOLUMES.

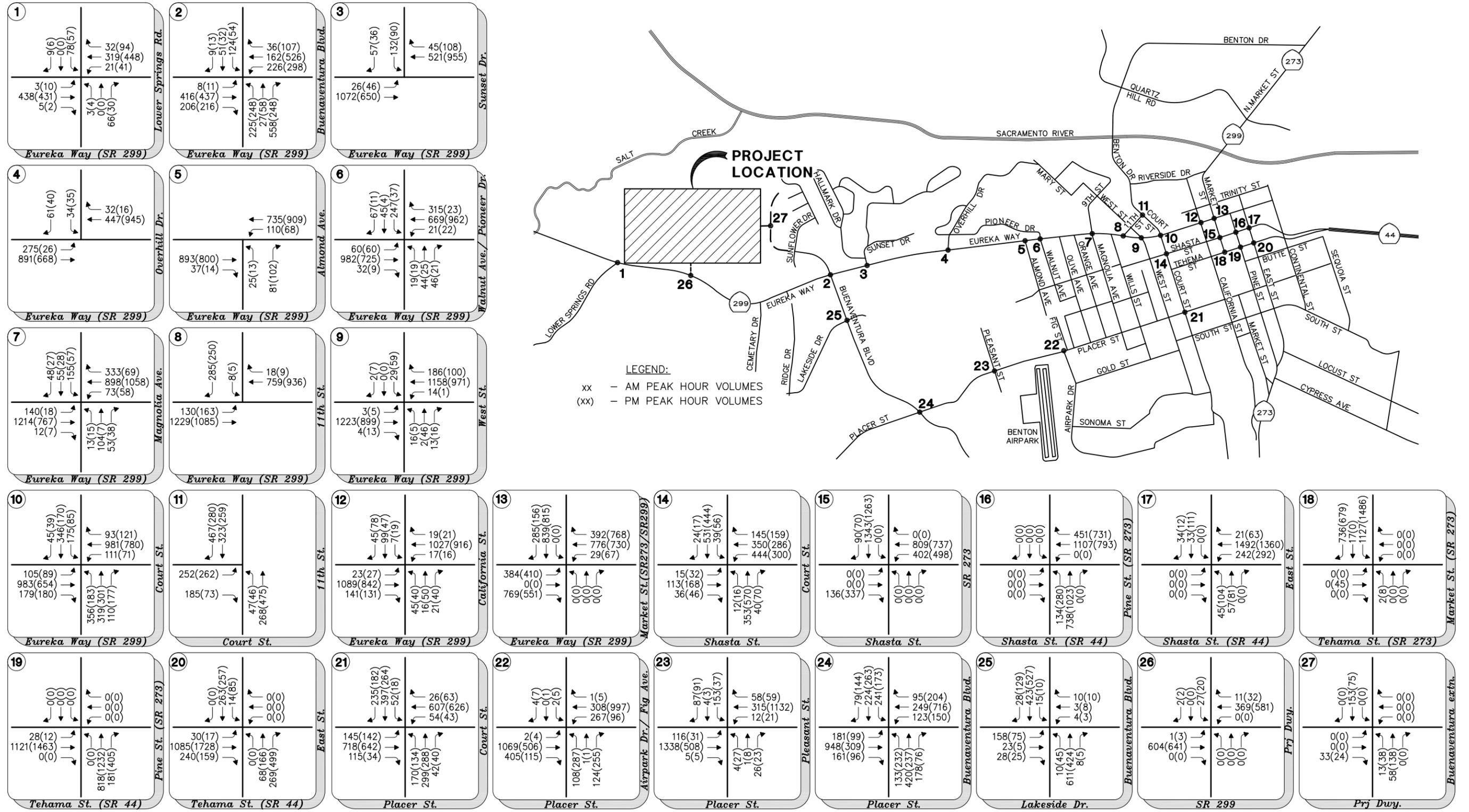
Intersections

As discussed in Section 5.4.5, PROJECTED TRAFFIC, Year 2015 Plus Project peak-hour intersection traffic operations were analyzed utilizing derived peak-hour intersection traffic volumes (shown on Figure 5.4-8) and lane geometrics and controls (shown on Figure 5.4-7). Table 5.4-10, YEAR 2015 PLUS PROJECT - INTERSECTION LEVEL OF SERVICE, provides a summary of the Year 2015 Plus Project peak-hour intersection LOS.

Under Year 2015 No Project and Year 2015 Plus Project conditions, eight intersections would operate at unacceptable LOS. All improvements identified in Year 2015 No Project conditions are sufficient to handle additional trips generated by the Project. Using the Standards of Significance discussed in Section 5.4.7, the proposed Project would have a significant impact on the following five intersections:

- Eureka Way (SR-299)/Sunset Drive (an increased delay of more than 5 seconds)
- Eureka Way (SR-299)/West Street (an increased delay of more than 5 seconds) (*improvements completed*)
- Court Street/11th Street (an increased delay of more than 5 seconds)
- Placer Street/Airpark Drive/Fig Avenue (an increased delay of more than 5 seconds)
- Buenaventura Boulevard/Lakeside Drive (an increased delay of more than 5 seconds)

Implementation of MM 5.4-2 would reduce potential Year 2015 Plus Project intersection impacts to less than significant levels. No additional mitigation measures are required.



Source: OMNI-MEANS, 12/14/07.

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 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Year 2015 Plus Project Peak-Hour Intersection Traffic Volumes



TABLE 5.4-10
Year 2015 Plus Project - Intersection Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Eureka Way (SR-299)/Lower Springs Rd./Prj Dwy.	TWSC	D	32.3	D	No	30.1	D	No
2	Eureka Way (SR-299)/Buenaventura Blvd.	Signal	D	27.8	B	-	25.7	C	-
3	Eureka Way(SR-299)/Sunset Drive	TWSC	D	94.8	F	Yes	153.5	F	Yes
4	Eureka Way (SR-299)/Overhill Drive	TWSC	D	21.7	C	No	20.3	C	No
5	Eureka Way (SR-299)/Almond Avenue	TWSC	D	19.5	C	No	15.4	C	No
6	Eureka Way (SR-299)/Walnut Avenue/Pioneer Drive	Signal	D	19.2	B	-	14.3	B	-
7	Eureka Way (SR-299)/Magnolia Avenue	Signal	D	33.0	C	-	16.8	B	-
8	Eureka Way (SR-299)/11 th Street	TWSC	D	21.3	C	-	23.0	C	-
9	Eureka Way (SR-299)/West Street	TWSC	D	480.0	F	No	OVR	F	No
10	Eureka Way (SR-299)/Court Street	Signal	D	276.4	F	-	92.0	F	-
11	Court Street/11th Street	TWSC	C	281.5	F	Yes	216.6	F	Yes
12	Eureka Way (SR-299)/California Street	Signal	D	15.9	B	-	16.5	B	-
13	Eureka Way (SR-299)/Market Street (SR-273/SR-299)	Signal	D	52.4	D	-	52.6	D	-
14	Shasta Street/Court Street	Signal	C	33.9	C	-	30.4	C	-
15	Shasta Street/Market Street(SR-273)	Signal	D	26.4	C	-	26.1	C	-
16	Shasta Street (SR-44)/Pine Street (SR-273)	Signal	D	19.2	B	-	23.2	C	-
17	Shasta Street (SR-44)/East Street	Signal	D	10.6	A	-	20.7	C	-
18	Tehama Street (SR-273)/Market Street (SR-273)	Signal	D	4.8	A	-	1.6	A	-
19	Tehama Street (SR-44)/Pine Street (SR-273)	Signal	D	11.0	B	-	15.3	B	-
20	Tehama Street (SR-44)/East Street (SR-273)	Signal	D	20.0	B	-	29.0	C	-
21	Placer Street/Court Street	Signal	C	33.9	C	-	29.4	C	-
22	Placer Street/Airpark Drive/Fig Avenue	Signal	C	47.8	D	-	80.2	F	-
23	Placer Street/Pleasant Street	Signal	C	67.8	E	-	26.7	C	-
24	Placer Street/Buenaventura Boulevard	Signal	C	48.2	D	-	47.7	D	-
25	Buenaventura Boulevard/Lakeside Drive	TWSC	C	233.4	F	Yes	55.4	F	No
26	Eureka Way (SR-299)/Project Entrance	TWSC	D	20.8	C	-	28.0	D	-
27	Buenaventura Boulevard Extension/Project Entrance	TWSC	C	9.3	A	-	8.8	A	-

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

TWSC = Two Way Stop Control

LOS = Worst case movement's LOS for TWSC intersections.

Warrant = MUTCD Peak hour volume based signal warrant.

Mitigation Measures:

MM 5.4-2a: Eureka Way (SR-299)/Sunset Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 23rd residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Eureka Way (SR-299)/Sunset Drive intersection.

MM 5.4-2b: Buenaventura Boulevard/Lakeside Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 24th residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Buenaventura Boulevard/Lakeside Drive intersection.



MM 5.4-2c: Court Street/11th Street. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 86th residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Court Street/11th Street intersection.

MM 5.4-2d: Placer Street/Airpark Drive/Fig Avenue. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 266th residential unit, the following improvements shall be made at the Placer Street/Airpark Drive/Fig Avenue intersection:

- Re-stripe westbound Placer Street to include one left-turn lane, one through lane, and one shared through/right-turn lane.
- Widen eastbound Placer Street to include one left-turn lane, two through lanes, and one exclusive right-turn lane.
- Modify the existing traffic signal as necessary to accommodate these improvements.

Roadway Segments

Year 2015 Plus Project daily traffic operations along roadway segments were analyzed by evaluating arterial segment roadway operations along Eureka Way (SR-299). Table 5.4-11, YEAR 2015 PLUS PROJECT - EUREKA WAY (SR-299) ROADWAY LEVEL OF SERVICE, contains a summary of the resulting Year 2015 Plus Project roadway segment LOS conditions.

**TABLE 5.4-11
Year 2015 Plus Project - Eureka Way (SR-299) Roadway Level of Service**

Eureka Way (SR-299) Roadway Segment - Eastbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	36.9	A	37.5	A
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	29.1	B	32.4	B

Eureka Way (SR-299) Roadway Segment - Westbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	48.2	A	47.8	A
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	30.7	B	32.8	B

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Analysis conducted for 2-lane, 3-lane, and 4-lane segments per existing configuration.

As shown in Table 5.4-11 on a corridor basis, Eureka Way (SR-299) between Lower Springs Road and Court Street is projected to operate at acceptable an LOS, based on average speed.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



PEDESTRIANS, BICYCLES, AND TRANSIT

5.4-3 **IMPLEMENTATION OF THE PROPOSED PROJECT COULD GENERATE PEDESTRIAN, BICYCLE, AND TRANSIT TRIPS, WHICH WOULD USE THE EXISTING AND PLANNED CIRCULATION NETWORK IN THE PROJECT AREA.**

Impact Analysis: The proposed Project would potentially generate pedestrian demand. The sidewalk system would be expected to accommodate any additional pedestrians generated by the Project. Sidewalks provide separation between pedestrians and vehicular traffic. There is an increased risk of vehicle-pedestrian conflicts where sidewalks do not exist. Sidewalks on one side of the street are not generally recommended; however, installing a sidewalk along one side of the street improves conditions where no sidewalk previously existed. The proposed Project would provide five-foot separated sidewalks with 6.5-foot landscaping buffers to the back of curb, on all interior streets. In addition, the proposed Project would construct a 10-foot sidewalk along the open-space side of Buenaventura Boulevard extension. The Project would not result in any adverse impacts to pedestrians. No mitigation is required.

Eureka Way (SR-299) is designated as a Class 3 bicycle route on the City of Redding *Parks, Trails, and Open Space Master Plan*. Buenaventura Boulevard is proposed to be a Class 2 bicycle route from Placer Street north to Eureka Way (SR-299) and a Class 1 bicycle route from Eureka Way (SR-299) to the Sacramento River. The City of Redding *Parks, Trails, and Open Space Master Plan* identifies this as a proposed multi-use trail. The City of Redding *General Plan* requires new development to provide bicycle facilities or pay in-lieu fees. The proposed Project proposes to complete the connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension. The proposed Project would contain 32 to 40-foot wide two way street sections which would not prohibit bicycle use on these interior roadways. The Project is not in conflict with the City of Redding *General Plan*; therefore, the Project would not result in any adverse impacts to bicyclists.

Existing transit service is provided primarily by the Redding Area Bus Authority (RABA). RABA provides fixed route service, express route service, and demand response service to the general public within the greater Redding Area. RABA operates 11 fixed routes within the cities of Redding, Shasta Lake, and Anderson. Route 2 provides a stop at Eureka Way (SR-299)/Buenaventura Boulevard, as well as several other stops at study intersections, predominately in the downtown business district. Several other RABA routes provide connectivity to many of the study intersections, predominantly in the downtown business district. The proposed Project would not interfere with existing transit service or transit stops and would potentially generate transit ridership. Expansion of Route 2 services would be considered as the Project is built out and the demand for services is warranted. However, street design within the Project would accommodate bus turnouts at strategic locations as determined through final plan review.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

EMERGENCY ACCESS

5.4-4 **IMPLEMENTATION OF THE PROPOSED PROJECT COULD RESULT IN INADEQUATE EMERGENCY ACCESS.**



Impact Analysis: Access to the proposed Project would be provided by three entrances; two on Eureka Way (SR-299) and one on the future extension of Buenaventura Boulevard. The City of Redding *General Plan* requires residential developments with 50 or more dwelling units to have a minimum of two access points to public streets. The proposed Project would provide three access points. This would allow adequate emergency access and therefore is considered a less than significant impact.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

DESIGN OR INCOMPATIBLE USES

5.4-5 IMPLEMENTATION OF THE PROPOSED PROJECT COULD SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR INTERSECTION SIGHT LINES) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT).

Impact Analysis: Roadway improvements associated with the proposed Project would be constructed consistent with the RMC and the City of Redding Construction Standards, relative to speed, sight distance, signage, and signalization. Impacts in this regard are considered less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

CUMULATIVE CONDITIONS (YEAR 2030)

5.4-6 DEVELOPMENT OF THE PROPOSED PROJECT COULD RESULT IN INCREASED TRAFFIC VOLUMES AT STUDY AREA INTERSECTIONS UNDER YEAR 2030 CUMULATIVE PLUS PROJECT CONDITIONS.

Impact Analysis: Project trip generation is discussed in Section 5.4.5, PROJECTED TRAFFIC. Table 5.4-7 shows that under Year 2030 Plus Project conditions, the Project would generate a total of 4,424 weekday daily trips, with 330 weekday daily trips during the AM peak-hour and 431 weekday daily trips during the PM peak-hour. Year 2030 conditions refer to analysis scenarios which would exist following assumed build out of the City of Redding *General Plan* and typically refer to analysis scenarios approximately 20 years in the future. Year 2030 conditions also assumed to be consistent with the current SCRTDF Model. Year 2030 No Project conditions assume that the proposed Project would remain undeveloped through year 2030, and year 2030 model land uses are assumed elsewhere. Year 2030 Plus Project conditions were then simulated by superimposing the proposed Project-generated traffic on top of the Year 2030 No Project traffic volumes.

Planned/Programmed Improvements

The Transportation Element of the *General Plan* identifies the following ultimate roadway improvements in the Project vicinity:

- **Buenaventura Boulevard:** Extend and improve Buenaventura Boulevard between Eureka Way (SR-299) and Keswick Dam Road to become a two-lane collector.



- Placer Street: Improve Placer Street between Buenaventura Boulevard and Airpark Drive to a four-lane, divided arterial. This improvement is also identified in the City's CIP 2007 - 2013.
- Court Street: Improve Court Street between Tehama Street and Eureka Way (SR-299) to add new channelization.
- Tehama Street: Improve Tehama Street between California Street and Market Street to two lanes eastbound and one lane westbound.
- Market Street: Improve Market Street between Eureka Way (SR-299) and Tehama Street to add one lane.
- Shasta Street: Improve Shasta Street between Market Street and Court Street to be a three-lane, one-way roadway (westbound).

Following these improvements, intersection approach geometrics would change at some intersections. Figure 5.4-11 shows the Year 2030 Conditions lane geometrics and controls.

YEAR 2030 NO PROJECT TRAFFIC OPERATION

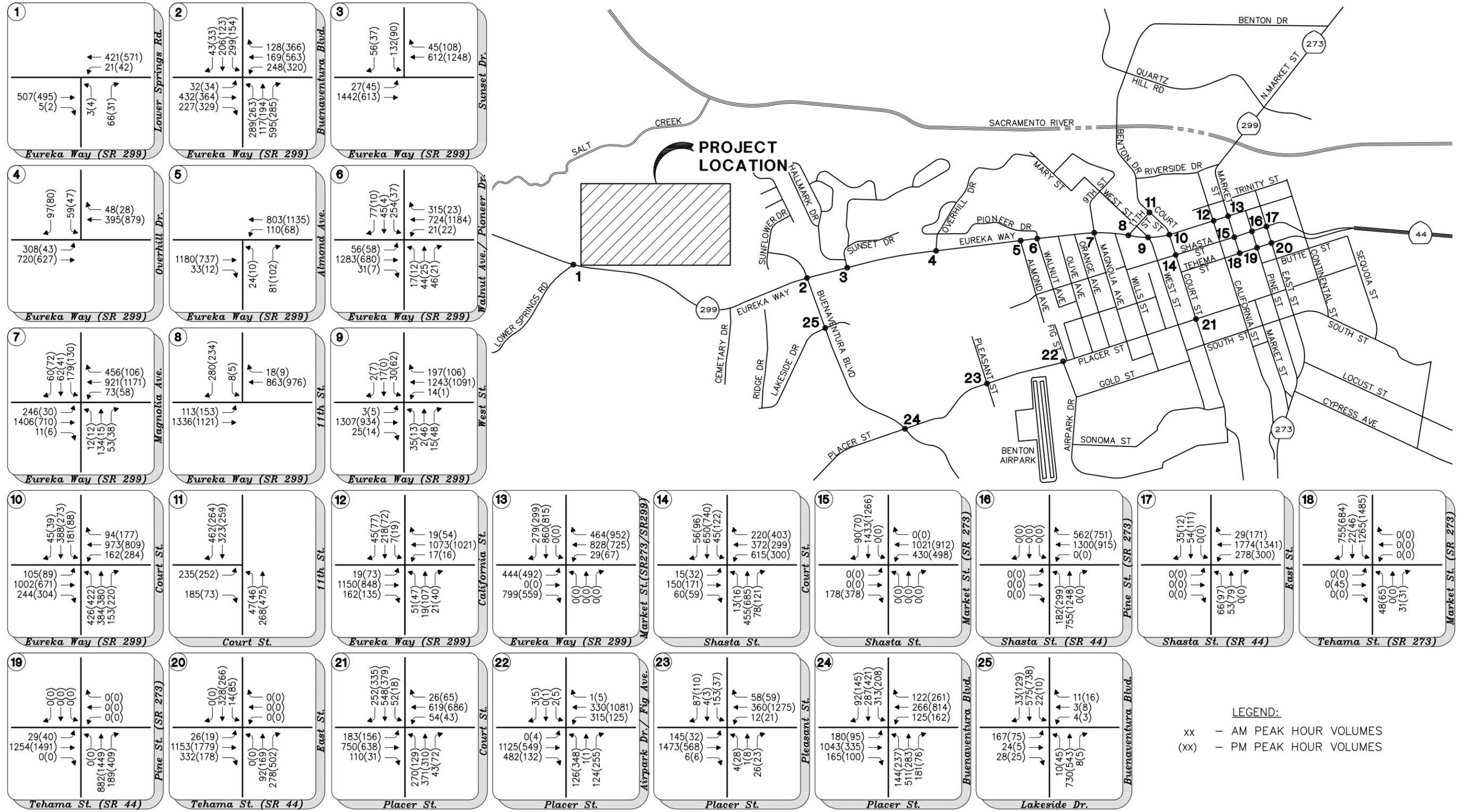
The Year 2030 No Project condition investigates traffic operations in Year 2030, excluding development of the proposed Project.

Intersections

The long-term traffic forecasts were developed using the SCRTDF Model (last major update in January 2007). There is a shift in traffic distribution patterns following improvements to Placer Street, as a result of which Year 2030 No Project traffic volumes at some locations on Eureka Way (SR-299) could be lesser than Year 2015 No Project volumes. Figure 5.4-9 depicts the Year 2030 No Project intersection volumes. Table 5.4-12, YEAR 2030 NO PROJECT - INTERSECTION LEVEL OF SERVICE, provides a summary of the resulting Year 2030 No Project peak-hour intersection LOS. As shown in Table 5.4-12, 11 intersections are projected to operate at unacceptable LOS under Year 2030 No Project conditions. The intersections are discussed in detail and recommended improvements are provided below.

Eureka Way (SR-299)/Buenaventura Boulevard: This signalized intersection is projected to operate at unacceptable LOS E in the AM peak-hour under Year 2030 No Project conditions. The recommended improvement is to widen southbound Buenaventura Boulevard to include an exclusive left-turn lane, a shared through/left-turn lane, and an exclusive right-turn lane. The intersection would continue to operate with split phasing on northbound and southbound Buenaventura Boulevard. These improvements would be accommodated by the City of Redding *General Plan*. Following these improvements, operations would improve to acceptable LOS D.

Eureka Way (SR-299)/Sunset Drive: This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria. The improvements recommended under Existing, Year 2015 No Project, and Year 2015 Plus Project (signalization) would accommodate Year 2030 No Project conditions.



Source: OMNI-MEANS, 12/14/07.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Year 2030 No Project Peak-Hour Intersection Traffic Volumes



TABLE 5.4-12
Year 2030 No Project - Intersection Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
1	Eureka Way (SR-299)/Lower Springs Road/Project Entrance	TWSC	D	13.5	B	No	13.8	B	No
2	Eureka Way (SR-299)/Buenaventura Boulevard	Signal	D	55.8	E	-	34.5	C	-
3	Eureka Way (SR-299)/Sunset Drive	TWSC	D	299.2	F	Yes	427.6	F	Yes
4	Eureka Way (SR-299)/Overhill Drive	TWSC	D	29.4	D	-	21.2	C	-
5	Eureka Way (SR-299)/Almond Avenue	TWSC	D	26.7	D	-	14.5	B	-
6	Eureka Way (SR-299)/Walnut Avenue/Pioneer Drive	Signal	D	20.9	C	-	15.8	B	-
7	Eureka Way (SR-299)/Magnolia Avenue	Signal	D	49.9	D	-	17.1	B	-
8	Eureka Way (SR-299)/11 th Street	TWSC	D	24.5	C	-	22.9	C	-
9	Eureka Way (SR-299)/West Street	TWSC	D	OVR	F	No	OVR	F	Yes
10	Eureka Way (SR-299)/Court Street	Signal	D	311.9	F	-	300.5	F	-
11	Court Street/11th Street	TWSC	C	247.3	F	Yes	191.1	F	Yes
12	Eureka Way (SR-299)/California Street	Signal	D	18.8	B	-	20.9	C	-
13	Eureka Way (SR-299)/Market Street(SR-273)	Signal	D	64.6	E	-	71.0	E	-
14	Shasta Street/Court Street	Signal	C	38.6	D	-	41.5	D	-
15	Shasta Street/Market Street(SR-273)	Signal	D	48.0	D	-	35.1	D	-
16	Shasta Street (SR-44)/Pine Street (SR-273)	Signal	D	20.6	C	-	26.6	C	-
17	Shasta Street (SR-44)/East Street	Signal	D	12.0	B	-	15.8	B	-
18	Tehama Street (SR-273)/Market Street (SR-273)	Signal	D	7.7	A	-	7.5	A	-
19	Tehama Street (SR-44)/Pine Street (SR-273)	Signal	D	12.7	B	-	17.0	B	-
20	Tehama Street (SR-44)/East Street (SR-273)	Signal	D	21.5	C	-	28.0	C	-
21	Placer Street/Court Street	Signal	C	41.9	D	-	29.9	C	-
22	Placer Street/Airpark Drive/Fig Avenue	Signal	C	65.1	E	-	39.7	D	-
23	Placer Street/Pleasant Street	Signal	C	19.8	B	-	19.8	B	-
24	Placer Street/Buenaventura Boulevard	Signal	C	67.1	E	-	39.5	D	-
25	Buenaventura Boulevard/Lakeside Drive	TWSC	C	690.8	F	Yes	228.4	F	Yes

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

TWSC = Two Way Stop Control, @ = at the threshold.

LOS = Worst case movement's LOS for TWSC intersections.

Warrant = MUTCD Peak hour volume based signal warrant.

Eureka Way (SR-299)/West Street: This Two-Way-Stop Controlled intersection is projected to operate at an unacceptable LOS F during the AM and PM peak-hour, and meets the signal warrant criteria under Year 2030 No Project conditions. The improvements recommended under Existing, Year 2015 No Project, and Year 2015 Plus Project conditions would accommodate Year 2030 No Project conditions. During the preparation of the *Traffic Impact Analysis Report*, an island was constructed at the intersection of Eureka Way and West Street that provided the recommended circulation improvements.

Eureka Way (SR-299)/Court Street: This signalized intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour. The following improvements are necessary to improve operations to an acceptable LOS:

- Widen eastbound Eureka Way (SR-299) to include one left-turn lane, three through lanes, and one exclusive right-turn lane.
- Widen westbound Eureka Way (SR-299) to include one left-turn lane, three through lanes, and one exclusive right-turn lane.



- Widen northbound Court Street to include two left-turn lanes, one through lane, and one exclusive right-turn lane.
- Widen southbound Court Street to include one left-turn lane, one through lane, and one exclusive right-turn lane.
- Increase the cycle length and optimize split phasing on Court Street.

Court Street /11th Street: This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria. The improvements recommended under Existing, Year 2015 No Project, and Year 2015 Plus Project conditions (signalization) would accommodate Year 2030 No Project conditions.

Eureka Way (SR-299)/Market Street (SR-273/SR-299): This signalized intersection is projected to operate at unacceptable LOS E with Caltrans provided signal timings. The recommended improvement is to provide a greater cycle length (about 90 seconds or more) and optimize the signal timings following which operations improve to acceptable LOS D.

Shasta Street/Court Street: This signalized intersection is projected to operate at unacceptable LOS D during the AM and PM peak-hour with Caltrans provided signal timings. The following improvements are required to improve operations to acceptable LOS C.

- Improve and re-stripe westbound Shasta Street to include one left-turn pocket, one shared through/left turn lane, and one right-turn pocket (75 ft long)
- The left-turn pocket would be 290 feet long and span the entire length of Shasta Street between Court Street and Oregon Street.

Placer Street/Court Street: This signalized intersection is projected to operate at unacceptable LOS D during the AM peak-hour under Year 2030 No Project conditions. The recommended improvement is to widen southbound Court Street and eastbound Placer Street to include a single left-turn lane, two through lanes, and one exclusive right-turn lane. Following these improvements, operations would improve to LOS C.

Placer Street/Airpark Drive/Fig Avenue: This signalized intersection is projected to operate at unacceptable LOS E in the AM peak-hour and LOS D in the PM peak-hour under Year 2030 No Project conditions. The improvements recommended under Year 2015 No Project and Year 2015 Plus Project conditions would accommodate Year 2030 No Project conditions.

Placer Street/Buenaventura Boulevard: This signalized intersection is projected to operate at unacceptable LOS E in the AM peak-hour and LOS D in the PM peak-hour under Year 2030 No Project conditions. The recommended improvements include the following:

- Widen northbound Buenaventura Boulevard to include one left-turn lane, two through lanes, and one exclusive right-turn lane.
- Widen southbound Buenaventura Boulevard to include dual left-turn lanes, two through lanes, and one exclusive right-turn lane.
- Widen eastbound Placer Street to include one left-turn lane, two through lanes, and one shared through/right-turn lane.



- Widen westbound Placer Street to include one left-turn lane, two through lanes, and one exclusive right-turn lane.

Some of the improvements on Placer Street are listed in the City of Redding *General Plan* and the City's CIP (ST-2005-09), which calls for the widening of Placer Street to four lanes between Airpark Drive and Buenaventura Boulevard. These improvements are assumed to be in place by Year 2030. The remaining improvements to Placer Street, those beyond the four-lane roadway, and the improvements to Buenaventura Boulevard are not listed in the City of Redding *General Plan* for future projects, nor are they listed in a transportation plan.

Buenaventura Boulevard/Lakeside Drive: This Two-Way-Stop-Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria. The recommended improvement is to signalize the intersection and widen eastbound Lakeside Drive to include one left-turn lane and one shared through/right-turn lane. Following these improvements, operations would improve to acceptable LOS C.

Roadway Segments

Year 2030 No Project daily traffic operations along roadway segments were analyzed by evaluating arterial segment operations along Eureka Way (SR-299). Table 5.4-13, YEAR 2030 NO PROJECT - EUREKA WAY (SR-299) ROADWAY LEVEL OF SERVICE, contains a summary of the Year 2030 No Project roadway segment LOS conditions. As shown in Table 5.4-13, on a corridor basis, Eureka Way (SR-299) between Lower Springs Road and Court Street is projected to operate at an acceptable LOS.

**TABLE 5.4-13
Year 2030 No Project - Eureka Way (SR-299) Roadway Level of Service**

Eureka Way (SR-299) Roadway Segment - Eastbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	31.4	B	34.6	B
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	28.6	B	32.4	B
Eureka Way (SR-299) Roadway Segment - Westbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	48.1	A	46.9	A
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	27.1	C	30.3	B

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Analysis conducted for 2-lane, 3-lane, and 4-lane segments per existing configuration.



YEAR 2030 PLUS PROJECT TRAFFIC OPERATIONS

The Year 2030 Plus Project condition is the analysis scenario in which traffic impacts associated with the proposed Project are investigated in comparison to the Year 2030 No Project condition scenario. Year 2030 Plus Project conditions were simulated by superimposing traffic generated by the proposed Project onto Year 2030 No Project intersection and roadway traffic volumes. The resulting Year 2030 Plus Project intersection traffic volumes and roadway traffic volumes are illustrated on Figure 5.4-10.

Intersections

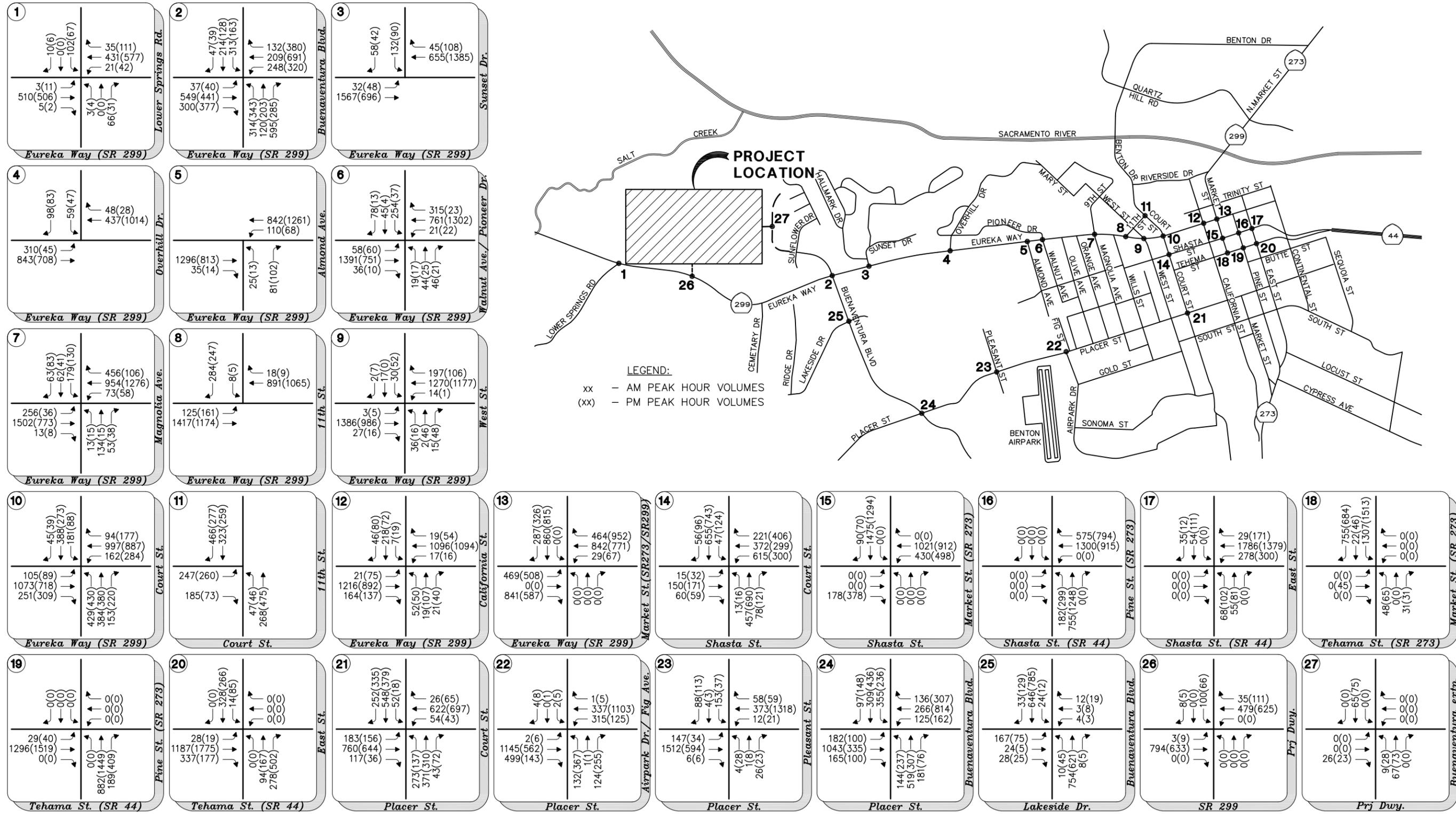
Year 2030 Plus Project peak-hour intersection traffic operations were analyzed utilizing derived Year 2030 Plus Project peak-hour intersection traffic volumes and lane geometrics and controls (Figure 5.4-11, YEAR 2030 PLUS PROJECT INTERSECTION LANE GEOMETRICS AND CONTROLS). Table 5.4-14, YEAR 2030 PLUS PROJECT - INTERSECTION LEVEL OF SERVICE, provides a summary of the Year 2030 Plus Project peak-hour intersection LOS.

Table 5.4-14 shows that the 11 intersections projected to operate unacceptably under Year 2030 No Project conditions are projected to continue operating unacceptably under Year 2030 Plus Project. In addition, two intersections would operate at unacceptable LOS under Year 2030 Plus Project conditions. These two intersections include: Eureka Way (SR-299)/Lower Springs Road/Project Entrance (Road A) and Eureka Way (SR-299)/Project Entrance (Road B).

Under Year 2030 No Project and Year 2030 Plus Project conditions, 13 intersections would operate at unacceptable LOS. The proposed Project would have a significant impact on nine of the 13 intersections. These affected intersections include:

- Eureka Way (SR-299)/Lower Springs Road/Project Entrance (Road A) - acceptable to unacceptable LOS
- Eureka Way (SR-299)/Project Entrance (Road B) - acceptable to unacceptable LOS
- Eureka Way (SR-299)/Buenaventura Boulevard - an increased delay of more than 5 seconds
- Eureka Way (SR-299)/Sunset Drive - an increased delay of more than 5 seconds
- Eureka Way (SR-299)/West Street - an increased delay of more than 5 seconds
- Court Street/11th Street - an increased delay of more than 5 seconds
- Eureka Way (SR-299)/Market Street (SR-273) - an increased delay of more than 5 seconds
- Placer Street/Buenaventura Boulevard - an increased delay of more than 5 seconds
- Buenaventura Boulevard/Lakeside Drive - an increased delay by more than 5 seconds

The proposed Project would have significant impacts on nine intersections; however, the recommended improvements for seven intersections are the same as the improvements identified under Year 2030 No Project conditions. Many of these recommended improvements were also identified under Existing conditions. The appropriate mitigation would be its fair-share payment towards the cost of these improvements. Recommendations for the Project entrance intersections are specific to the Year 2030 Plus Project condition. Implementation of MM 5.4-6a through 6c would improve intersection operations at the proposed Project entrances to an acceptable LOS.



Source: OMNI-MEANS, 12/14/07.

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Year 2030 Plus Project Peak-Hour Intersection Traffic Volumes



TABLE 5.4-14
Year 2030 Plus Project - Intersection Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
1	Eureka Way (SR-299)/Lower Springs Road/Project Entrance	TWSC	D	75.9	F	Yes	72.4	F	No
2	Eureka Way (SR-299)/Buenaventura Boulevard	Signal	D	65.7	E	-	39.2	D	-
3	Eureka Way (SR-299)/Sunset Drive	TWSC	D	441.4	F	Yes	740.4	F	Yes
4	Eureka Way (SR-299)/Overhill Drive	TWSC	D	34.6	D	No	25.9	D	No
5	Eureka Way (SR-299)/Almond Avenue	TWSC	D	32.3	D	No	16.1	C	No
6	Eureka Way (SR-299)/Walnut Avenue/Pioneer Drive	Signal	D	22.3	C	-	12.7	B	-
7	Eureka Way (SR-299)/Magnolia Avenue	Signal	D	52.8	D	-	18.4	B	-
8	Eureka Way (SR-299)/11 th Street	TWSC	D	26.5	D	No	27.9	D	No
9	Eureka Way (SR-299)/West Street	TWSC	D	OVR	F	No	OVR	F	Yes
10	Eureka Way (SR-299)/Court Street	Signal	D	312.4	F	-	301.8	F	-
11	Court Street/11th Street	TWSC	C	271.6	F	Yes	211.5	F	Yes
12	Eureka Way (SR-299)/California Street	Signal	D	19.1	B	-	21.6	C	-
13	Eureka Way (SR-299)/Market Street (SR-273/SR-299)	Signal	D	71.5	E	-	77.6	E	*See Note Below
14	Shasta Street/Court Street	Signal	C	39.0	D	-	41.8	D	-
15	Shasta Street/Market Street(SR-273)	Signal	D	47.5	D	-	35.1	D	-
16	Shasta Street (SR-44)/Pine Street (SR-273)	Signal	D	20.7	C	-	27.3	C	-
17	Shasta Street (SR-44)/East Street	Signal	D	12.4	B	-	17.0	B	-
18	Tehama Street (SR-273)/Market Street (SR-273)	Signal	D	7.8	A	-	8.5	A	-
19	Tehama Street (SR-44)/Pine Street (SR-273)	Signal	D	13.0	B	-	17.2	B	-
20	Tehama Street (SR-44)/East Street (SR-273)	Signal	D	21.6	C	-	28.2	C	-
21	Placer Street/Court Street	Signal	C	42.6	D	-	30.0	C	-
22	Placer Street/Airpark Drive/Fig Avenue	Signal	C	68.4	E	-	43.4	D	-
23	Placer Street/Pleasant Street	Signal	C	19.9	B	-	18.3	B	-
24	Placer Street/Buenaventura Boulevard	Signal	C	74.1	E	-	43.0	D	-
25	Buenaventura Blvd./Lakeside Drive	TWSC	C	911.3	F	Yes	384.3	F	Yes
26	Eureka Way (SR-299)/Project Entrance	TWSC	D	68.4	F	Yes	45.8	E	No
27	Buenaventura Boulevard extension/Project Entrance	TWSC	C	8.7	A	No	8.8	A	No

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

Notes:

TWSC = Two Way Stop Control.

LOS = Worst case movement's LOS for TWSC intersections.

Warrant = MUTCD Peak hour volume based signal warrant.

* As part of standard operational maintenance, Caltrans performs signal-length analysis and implements adjustments as necessary. No further improvement is necessary.



Mitigation Measures:

MM 5.4-6a: Eureka Way (SR-299)/Road B. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 259th residential unit, the Project Applicant shall construct one of the following alternatives to accommodate traffic movements at the Eureka Way (SR-299)/Road B intersection:

- A traffic signal and necessary appurtenant improvements, or
- Improvements to restrict movements to right-in/right-out and left-in only.

MM 5.4-6b: Eureka Way (SR-299)/Lower Springs Road. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 295th residential unit, the Project Applicant shall construct the following improvements at the Eureka Way (SR-299)/Lower Springs Road intersection:

- A traffic signal, widening of the eastbound approach to add a dedicated left-turn lane and necessary appurtenant improvements, or
- If the Eureka Way (SR-299)/Road B intersection is improved to restrict movements to right-in/right-out and left-in only, the southbound approach (Road A) shall be widened to accommodate 1 left-turn lane, 1 shared left-turn/through lane, and 1 right-turn lane; eastbound Eureka Way (SR-299) shall be widened to accommodate 2 receiving lanes from the left-turn lanes exiting the Project; and the second receiving lane shall be tapered and terminated approximately 1,620 feet of the intersection.

MM 5.4-6c: Eureka Way (SR-299)/Buenaventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartment units which cumulatively would allow the 377th residential unit, the Project Applicant shall improve Eureka Way (SR-299)/Buenaventura Boulevard intersection by widening the southbound approach to include an exclusive left-turn lane, a shared through/left-turn lane and an exclusive right-turn lane. The existing traffic signal shall be modified as necessary to accommodate these improvements.

MM 5.4-6d: Placer Street/Buenaventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartments which would cumulatively allow the 377th residential unit, the Project Applicant shall pay the pro-rata cost share representing 18 percent of the cost of improvements to Buenaventura Boulevard at its intersection with Placer Street as identified in the Project's *Traffic Impact Analysis Report* (Omni-Means, June 2009). The fee shall be established based on an engineer's cost estimate of the improvements prepared by the Project Applicant and approved by the City Engineer. Alternatively, should the subject Buenaventura Boulevard improvements be added to the Citywide Traffic Improvement Fee (TIF) program, from that point forward payment of the TIF in accordance with the Redding Municipal Code will be deemed sufficient mitigation.

Roadway Segments

Year 2030 Plus Project daily traffic operations along roadway segments were analyzed by evaluating arterial segment operations along Eureka Way (SR-299). Table 5.4-15, YEAR 2030 PLUS PROJECT - EUREKA WAY (SR-299) ROADWAY LEVEL OF SERVICE, contains a summary of the Year 2030 Plus Project



roadway segment LOS. As shown in Table 5.4-15, below, on a corridor basis, Eureka Way (SR-299) between Lower Springs Road and Court Street is projected to operate at an acceptable LOS.

TABLE 5.4-15
Year 2030 Plus Project - Eureka Way (SR-299) Roadway Level of Service

Eureka Way (SR-299) Roadway Segment - Eastbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	27.4	C	33.7	B
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	27.2	C	32.2	B
Eureka Way (SR-299) Roadway Segment - Westbound Direction	Target LOS	Capacity Configuration	Arterial Class	Free Flow Speed (mph)	AM peak hour		PM peak hour	
					Arterial Speed (mph)	LOS	Arterial Speed (mph)	LOS
Lower Springs Road to Buenaventura Boulevard	D	Two to Four Lane Arterial	II	50	47.9	A	47.5	A
Buenaventura Boulevard to Court Street	D	Four-Lane Divided Arterial	II	35 to 45	26.8	C	26.9	B

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

1) Analysis conducted for 2-lane, 3-lane, and 4-lane segments per existing configuration.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



5.5 NOISE

The purpose of this section is to analyze project-related noise source impacts on-site and to surrounding land uses. This section evaluates short-term construction-related impacts, as well as future buildout conditions. Mitigation measures are also recommended to avoid or lessen the project's noise impacts. Information in this section was obtained from the City of Redding *General Plan* and the *Municipal Code (RMC)*. For the purposes of mobile source noise modeling and contour distribution, traffic information contained in the Project's *Traffic Impact Analysis Report* was utilized; refer to Section 5.4, TRAFFIC AND CIRCULATION. Also refer to Appendix 15.4, NOISE DATA, for a print-out of noise monitoring data.

5.5.1 EXISTING CONDITIONS

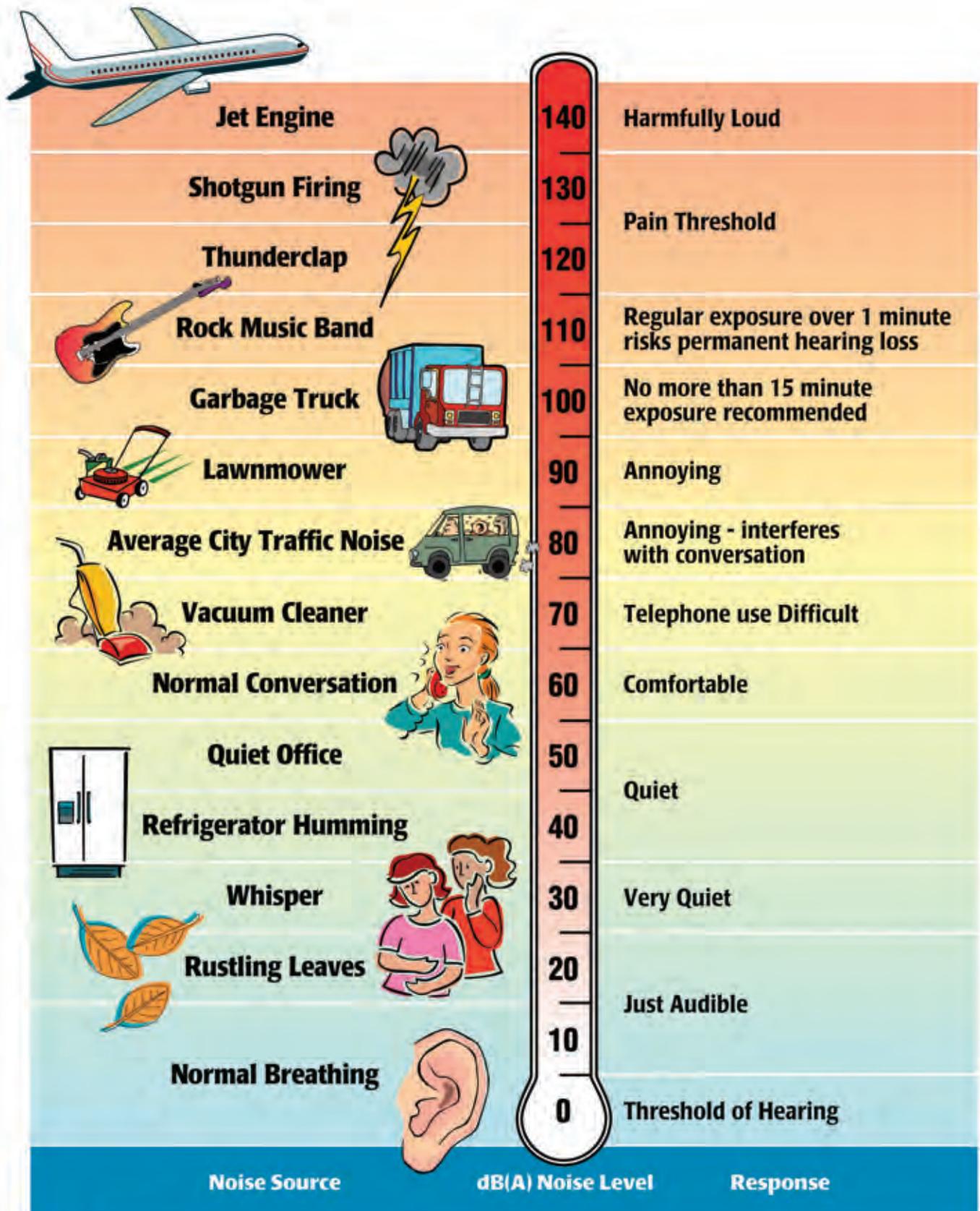
NOISE SCALES AND DEFINITIONS

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

The perceived loudness of sound 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 the A-weighted sound levels (expressed as dBA) and the way the human ear perceives noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Figure 5.5-1, SOUND LEVELS AND HUMAN RESPONSE. Numerous methods have been developed to measure sound over a period of time; refer to Table 5.5-1, NOISE DESCRIPTORS.



Source:

Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.

Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004)*, March 1974.

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Sound Levels and Human Response

Figure 5.5-1



**TABLE 5.5-1
Noise Descriptors**

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time varying signal over a given time period. The L_{eq} is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM.
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq} . The L_{dn} is calculated by averaging the L_{eq} 's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
L_{01} , L_{10} , L_{50} , L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.

Source: Cyril M. Harris, *Handbook of Noise Control*, 1979.

HEALTH EFFECTS OF NOISE

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

When the noise level of an activity rises above 70 dBA, the chance of receiving a complaint is possible, and as the noise level rises, dissatisfaction among the public steadily increases. However, an individual's reaction to a particular noise depends on many factors, such as the source of the sound, its loudness relative to the



background noise, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community.

The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories:

- Noise-Induced Hearing Loss;
- Interference with Communication;
- Effects of Noise on Sleep;
- Effects on Performance and Behavior;
- Extra-Auditory Health Effects; and
- Annoyance.

Although it often causes discomfort and sometimes pain, noise-induced hearing loss usually takes years to develop. Noise-induced hearing loss can impair the quality of life through a reduction in the ability to hear important sounds and to communicate with family and friends. Hearing loss is one of the most obvious and easily quantified effects of excessive exposure to noise. While the loss may be temporary at first, it could become permanent after continued exposure. When combined with hearing loss associated with aging, the amount of hearing loss directly caused by the environment is difficult to quantify. Although the major cause of noise-induced hearing loss is occupational, substantial damage can be caused by non-occupational sources.

According to the United States Public Health Service, nearly ten million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure. Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate despite of the noise.

Interference with communication has proved to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and nonoccupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depends on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high and the task sufficiently complex for effects on performance to occur.

Recent research indicates that more moderate noise levels can produce disruptive after-effects, commonly manifested as a reduced tolerance for frustration, increased anxiety, decreased incidence of "helping" behavior, and increased incidence of "hostile" behavior. Noise has been implicated in the development or exacerbation of a variety of health problems, ranging from hypertension to psychosis. As with other categories, quantifying these effects is difficult due to the amount of variables that need to be considered in each situation. As a biological stressor, noise can influence the entire physiological system. Most effects seem



to be transitory, but with continued exposure some effects have been shown to be chronic in laboratory animals.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the United States Department of Transportation, the effects of annoyance to the community were quantified. In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community is highly annoyed. When levels exceed 65 dBA CNEL, that percentage rises to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is clear that noise can affect human health. Most of the effects are, to a varying degree, stress related.

GROUND-BORNE VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root mean square velocity (RMS) is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak or vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response. Typically, ground-borne vibration, generated by man-made activities, attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures preceding construction generates the highest vibrations. Construction equipment such as vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible vibration during construction activities. Heavy trucks can also generate ground-borne vibrations that vary depending on vehicle type, weight, and pavement conditions. Figure 5.5-2, TYPICAL VIBRATION SOURCES AND SENSITIVITIES, lists typical vibration sources and their effects.

SENSITIVE RECEPTORS

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack of it, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours.

Typical Vibration Sources and Sensitivities

Peak Ground Velocity (in/sec)	TYPICAL VIBRATION SOURCES			EFFECTS OF VIBRATION		
	Transportation Sources	Construction Sources	Natural Sources	Structural Damages	Human Perception	People and Equipment Tolerance
100						
10			<ul style="list-style-type: none"> San Francisco, CA Earthquake 4/18/06 Santa Cruz, CA Earthquake 10/17/89 		Intolerable	
1.0		Blasting at 50 ft.	<ul style="list-style-type: none"> Coalinga, CA Earthquake 5/2/83 	<ul style="list-style-type: none"> Structural Damage Minor Damage 	<ul style="list-style-type: none"> Extremely Unpleasant Very Unpleasant Unpleasant 	<ul style="list-style-type: none"> Human Exposure 1 Minute 1 Hours
0.1		Pile Driving at 50 ft.	Typical Moonquake	<ul style="list-style-type: none"> Low Probability of Damage 		<ul style="list-style-type: none"> 8 Hours 24 Hours
0.01				Very Safe to Buildings	<ul style="list-style-type: none"> Strongly Noticeable 	Computers
0.01	Subway Train (Measure above tunnel)	Truck or Dozer at 50 ft.			Easily Noticeable	Office
0.001	Motor Vehicle Traffic at 50 ft. on Rough Roadway and Elevated Highway	Jackhammer at 50 ft.			Barely Perceptible	Residences
0.001	Motor Vehicle Traffic at 50 ft. on Smooth Roadway and At-grade Highway	Blasting at 500 ft.	Micro-Meteorite Impacts at 50 ft.		Imperceptible	Optical Microscopes
0.0001	Truck at 200 ft. on Rough Roadway	Pile Driving at 500 ft.				Electron Microscopes

Source: Nugent & Amick, 1992, Environmental Monitor Vibration Considerations in Land Use Planning, Summer 1992.
 Ogden, 1995, Typical Vibration Sources and Sensitivities.



The Project site is currently vacant and undeveloped, and is bordered to the north by Salt Creek; to the south by Eureka Way (SR-299) and undeveloped land; to the east by Gold Run Creek and single-family residential uses; and to the west by Salt Creek and undeveloped land. Known noise-sensitive land uses in the immediate project vicinity include the existing single-family residences, schools, institutional, and hospital facilities to the east and south of the proposed Project. These uses may be affected by increased project-related traffic noise on local area roadways and on-site noise sources. The closest noise-sensitive uses to the proposed Project are approximately 350 feet east and 1,500 feet south of the proposed Project. Refer to Table 5.5-2, SENSITIVE RECEPTORS, for a listing of sensitive receptors in the Project vicinity.

**TABLE 5.5-2
Sensitive Receptors**

Type	Name	Location	Distance and Direction from the Project site
School	West Redding Preschool	3490 Placer Street	0.96 mile southeast
	Manzanita Elementary School	1240 Manzanita Hills Avenue	1.00 mile southeast
Institutional	Church of Jesus Christ of Latter-Day Saints	3950 Sunflower Drive	0.10 mile southeast
	Seventh Day Adventist Church	2828 Eureka Way	0.88 mile east
	Pilgrim Congregational Church	2850 Foothill Boulevard	1.00 mile east
	First Christian Church	3590 Eureka Way	0.76 mile southeast
Hospital	Patients Hospital	2900 Eureka Way	0.76 mile east
	Northern California Rehab Hospital	2801 Eureka Way	0.93 mile east
Residential	Residences	Immediately east	Adjoining
	Residences	Immediately south	0.30 mile south

Source: Google Maps, <http://www.maps.google.com>

AMBIENT NOISE MEASUREMENTS

In order to quantify existing ambient noise levels in the Project area, RBF Consulting conducted noise measurements on August 5, 2008; refer to Table 5.5-3, NOISE MEASUREMENTS. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site; refer to Figure 5.5-3, NOISE MEASUREMENT LOCATIONS. Ten-minute measurements were taken at each site, between 9:00 a.m. and 11:30 a.m. Meteorological conditions consisted of light wind speeds (0 to 5 miles per hour), low humidity, and clear skies.



**TABLE 5.5-3
Noise Measurements**

Site No.	Location	Leq (dBA)	Time
1	Located in the Cul de Sac of Sunday Court	38.9	9:08 a.m.
2	Located along Buenaventura Street	54.5	9:35 a.m.
3	Located along the Sacramento River Trail	47.1	10:30 a.m.
4	Located along SR-299 at Lower Springs Road	72.0	11:30 a.m.

Source: Noise Monitoring Survey conducted by RBF Consulting, August 5, 2008.

Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Handheld Analyzer Type 2250 equipped with a 4189 pre-polarized free field microphone. The monitoring equipment complies with applicable requirements of the American National Standards Institute for Type I (precision) sound level meters. Refer to Appendix 15.4, NOISE DATA, for a print-out of the noise monitoring data. Existing measured noise levels range from approximately 38.9 dBA to 72.0 dBA.

MOBILE NOISE SOURCES

In order to assess the potential for mobile source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the Project area. Noise models were run using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and site parameters. These parameters determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g. number of lanes), roadway width, average daily traffic (ADT), vehicle travel speed, percentages of auto and truck traffic, roadway grade, angle-of-view, and site conditions ("hard" or "soft"). Noise projections are based on modeled vehicular traffic as derived from the Project *Traffic Impact Analysis Report*.

A 25- to 45-mile per hour (mph) average vehicle speed was assumed for existing conditions based on empirical observations and posted maximum speeds along the adjacent roadways. ADT estimates were obtained from the Project *Traffic Impact Analysis Report*; refer to Appendix 15.3, TRAFFIC IMPACT ANALYSIS. Existing modeled traffic noise levels can be found in Table 5.5-4, EXISTING TRAFFIC NOISE LEVELS. As shown in Table 5.5-4, noise within the area from mobile noise sources ranges from 51.9 dBA to 66.0 dBA.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Noise Measurement Locations

Figure 5.5-3

1 Noise Measurement Location

not to scale



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 CONSULTING

9/24/08 JN 60-100416-15334 MAS



TABLE 5.5-4
Existing Traffic Noise Levels

Roadway Segment	Existing Conditions				
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)		
			60 Ldn	65 Ldn	70 Ldn
Eureka Way (SR-299)					
West of Lower Springs Road	7,125	62.1	157	73	34
Between Lower Springs Road and Cemetery Drive	8,753	63.0	180	84	39
Between Cemetery Drive and Ridge Drive	8,753	60.3	129	60	28
Between Ridge Drive and Buenaventura Boulevard	8,753	60.1	129	60	28
Between Buenaventura Boulevard and Sunset Drive	15,173	62.5	186	86	40
Between Sunset Drive and Overhill Drive	16,295	62.8	195	90	42
Between Overhill Drive and Almond Avenue	14,970	65.5	465	147	47
Placer Street					
West of Buenaventura Boulevard	13,190	65.1	410	130	41
Between Buenaventura Boulevard and Pleasant Street	12,793	65.0	398	126	40
Between Pleasant Street and Airpark Drive	13,823	65.3	430	136	43
Lower Springs Road					
South of Eureka Way (SR-299)	845	52.8	38	18	8
Buenaventura Boulevard					
Between Placer Street and Lakeside Drive	8,920	63.7	277	88	28
Between Lakeside Drive and Eureka Way (SR-299)	9,920	60.8	140	65	30
Between Eureka Way (SR-299) and Sunflower Drive	1,360	51.5	17	5	2
North of Sunflower	N/A	N/A	N/A	N/A	N/A

ADT = average daily trips; dBA = A-weighted decibels; Ldn = day/night average noise level; N/A = Not Applicable; Buenaventura Boulevard does not currently extend north of Sunflower Drive.

Source: Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.



STATIONARY NOISE SOURCES

The Project area consists of residential and undeveloped land uses served by a grid system of arterial and collector streets. The primary sources of stationary noise in the Project vicinity are recreational users and residential activities. The noise associated with these sources may represent a single-event noise occurrence, short-term or long-term/continuous noise.

5.5.2 REGULATORY FRAMEWORK

It is difficult to specify noise levels that are generally acceptable to everyone; what is annoying to one person may be unnoticed by another. Standards may be based on documented complaints in response to documented noise levels, or based on studies of the ability of people to sleep, talk or work under various noise conditions. All such studies, however, recognize that individual responses vary considerably. Standards usually address the needs of most of the general population.

This section summarizes the laws, ordinances, regulations and standards that are applicable to the proposed Project. Regulatory requirements related to environmental noise are typically promulgated at the local level. However, federal and state agencies provide standards and guidelines to the local jurisdictions.

STATE OF CALIFORNIA GUIDELINES

California Environmental Quality Act

CEQA was enacted in 1970 and requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of standards established in the local general plan or noise ordinance.

Additionally, under CEQA, a project has a potentially significant impact if the project creates a substantial increase in the ambient noise levels in the project vicinity above levels existing without the project. If a project has a potentially significant impact, mitigation measures must be considered. If mitigation measures to reduce the impact to less than significant levels are not feasible due to economic, social, environmental, legal or other conditions, the most feasible mitigation measures must be considered.

California Government Code

California Government Code §65302 (f) mandates that the legislative body of each county and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services.

The guidelines rank noise land use compatibility in terms of “normally acceptable”, “conditionally acceptable”, “normally unacceptable” and “clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial and professional uses.



CITY OF REDDING

Redding Municipal Code

Local agencies may regulate noise levels of most sources not regulated by the Federal government; provide standards for insulation of noise receivers, either within the structure or by placement of noise barriers such as walls; and, through land use decisions, reduce noise impacts by separating noise generators from noise sensitive uses.

The City of Redding Noise Element of the *General Plan* and *Noise Ordinance* of the RMC provide noise guidelines and standards for significant noise generators. Mobile source noise standards from the City's Noise Element are presented in Table 5.5-5, MAXIMUM ALLOWABLE NOISE EXPOSURE TRANSPORTATION NOISE SOURCES. Noise standards from Chapter 18.40 (Noise Standards), of the RMC are presented in Table 5.5-6, CITY OF REDDING EXTERIOR NOISE STANDARDS.

**TABLE 5.5-5
 Maximum Allowable Noise Exposure Transportation Noise Sources**

Land Use	Outdoor Activity Areas ¹ Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB ²
Residential	60 ³	45	--
Transient Lodging	60 ³	45	--
Hospitals, Nursing Homes	60 ³	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60 ³	--	40
Office Buildings	--	--	45
School, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

dBA = A-weighted decibel; CNEL = Community Noise Equivalent Level; Ldn = day/night average noise level; Leq = Equivalent Noise Level.

Notes:

1. The exterior noise-level standards shall be applied to the outdoor activity area of the receiving land use. Outdoor activity areas are normally located near or adjacent to the main structure and often occupied by porches, patios, balconies, etc.
2. As determined for a typical worst-case hour during periods of use.
3. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less, using practical application of the best-available, noise-reduction measures have been implemented and that interior noise levels are in compliance with this table.
4. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas, such as pool areas, may not be included in the project design. In these cases, only the interior noise-level criterion will apply.

Source: City of Redding, *City of Redding General Plan*, October 2000.



TABLE 5.5-6
City of Redding Exterior Noise Standards

Receiving Land Use Category	Time Period	Noise Level (Hourly Leq/dB)
Residential	10 p.m. - 7 a.m.	45
	7 a.m. - 10 p.m.	55
Office/Commercial	10 p.m. - 7 a.m.	55
	7 a.m. - 10 p.m.	65
Industrial	10 p.m. - 7 a.m.	N/A ¹
	7 a.m. - 10 p.m.	N/A ¹

¹ Industrial noise shall be measured at the property line of any nonindustrial district.
 Source: RMC Chapter 18.40 (Noise Standards) §18.40.100-A.

Section 18.40.100 (E) addresses exterior noise limits.

E. The maximum sound levels shall be determined as follows:

- 1. The noise standards for the various land use categories set forth in Table 5.5-6, unless otherwise specified, shall apply to all such property within a designated zone. No person shall operate or cause to be operated any source of sound at any location within the City or allow the creation of any noise on property owned, leased, or occupied which causes the noise level when measured on any other property to exceed the noise standard for that land use.*
- 2. If the measured ambient level is above that permissible, the allowable noise exposure standard shall be increased to reflect the actual ambient noise level.*

Section 18.40.100 (F) addresses prohibited acts under the City of Redding *Noise Ordinance*.

F. The following acts are hereby prohibited:

- 1. Loading and Unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials or similar objects between the hours of ten p.m. and seven a.m. in such manner as to cause a noise disturbance across a residential property line.*
- 2. Construction or Demolition.*
 - a. Operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work in or within 500 feet of a residential district such that sound creates a noise disturbance across a property line during the following times:*



i. May 15 through September 15: Between the weekday hours of seven p.m. and six a.m. and weekends and holidays between eight p.m. and nine a.m.

ii. September 16 through May 14: Between the weekday hours of seven p.m. through seven a.m. and weekends and holidays between eight p.m. and nine a.m.

3. Domestic Power Tools and Equipment. Operation of any mechanically powered saw, lawn or garden tool or similar outdoor tool between ten p.m. and seven a.m. on weekdays (or nine p.m. and eight a.m. on weekends and legal holidays) so as to create a noise disturbance across a residential or commercial property line.

Sections 18.40.100 (G) and (H) address exemptions to the *Noise Ordinance*.

G. Emergency Exemptions. The provisions in this chapter shall not apply to:

- 1. The emission of sound for the purpose of alerting the existence of an emergency.*
- 2. The emission of sound in the performance of emergency work.*

H. Miscellaneous Exemptions. The provisions in this chapter shall not apply to:

- 1. Warning devices necessary for the protection of public safety (police, fire, ambulance sirens).*
- 2. Outdoor activities including occasional outdoor gatherings, public dances, shows, and sporting and entertainment events provided that they are conducted pursuant to a permit or license issued by the city.*
- 3. Churches and other similar organizations which use unamplified bells, chimes or other similar devices, so long as they play such between seven a.m. and ten p.m. and the playing period does not exceed thirty minutes in any one hour.*
- 4. Municipal solid waste collection by the City of Redding.*
- 5. Public works construction projects including utility and similar construction projects.*
- 6. Public utility facilities including, but not limited to, sixty-cycle electric power transformers and related equipment, sewer lift stations, municipal wells and pumping stations.*

Section 18.40.110 (A) and §18.40.110 (B) discuss Citywide performance standards pertaining to noise.



A. Noise attenuation measures. The approving authority may require the incorporation into a project of any noise-attenuation measures deemed necessary to ensure that noise standards are not exceeded, including, but not limited to, noise walls exceeding maximum height limits, and minimum setbacks of the zoning district. Mitigation to noise impacts shall be recommended, giving preference to site planning and design rather than noise barriers, where feasible.

B. No use, activity or process shall produce vibrations that are perceptible without instruments at one or more property lines of a site.

City of Redding General Plan

The City of Redding *General Plan* provides goals, policies, and implementation measures in order to reduce noise impacts of projects. Applicable goals, objectives, and policies relative to the proposed Project site within the noise element are listed in Table 5.5-7, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR NOISE, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.

5.5.3 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Appendix G, of the State *CEQA Guidelines* contains analysis guidelines related to the assessment of noise impacts. These guidelines have been utilized as thresholds of significance for this analysis. As stated in Appendix G, a project may create a significant environmental impact if one or more of the following occurs:

- 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;
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- 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, would the Project expose people residing or working in the Project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels.



TABLE 5.5-7
Consistency Analysis with City of Redding General Plan
Goals and Policies for Noise

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Noise Element</u></p>	
<p>Goal N1: Protect residents from the harmful and annoying effects of exposure to excessive noise.</p>	
<p>Policy N1C: Require an acoustical analysis for new development in locations where exterior and/or interior noise levels will likely exceed the City's noise standards to determine appropriate mitigation measures.</p>	<p>This acoustical analysis was completed as a part of the EIR. Mitigation measures are included in this section.</p>
<p>Policy N1D: Encourage the use of site planning and building materials/design as primary methods of noise attenuation.</p>	<p>The Project would be required by the Development Services Department to incorporate building materials and design methods to reduce noise impacts.</p>
<p>Policy N1F: Discourage use of noise barriers and walls constructed exclusively for noise attenuation purposes, where possible. In instances where noise barriers cannot be avoided, require the use of site planning and building material/design features in conjunction with barriers to mitigate visual impacts and reduce the size of barriers.</p>	<p>Pursuant to MM 5.5-2, the proposed Project shall construct a six-foot perimeter wall along the Project site facing Eureka Way (SR-299), from the western site boundary to proposed Road A. Acceptable materials for the construction of the barrier shall have a density of 3.5 pounds per square foot of surface area and be constructed of masonry materials. The exterior finish of the wall shall be determined in consultation with the City's Development Services Department.</p>
<p>Goal N2: Protect residents from exposure to excessive transportation-related noise.</p>	
<p>Policy N2B: Prevent development of new projects which contain noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation sources which exceed specified levels, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified.</p>	<p>The Project proposes residential uses along Eureka Way (SR-299). Pursuant to MM 5.5-2, the Project shall construct a six-foot perimeter wall along the Project site facing Eureka Way (SR-299), from the western site boundary to proposed Road A, in order to reduce on-site noise levels to within the City's exterior standard.</p>
<p>Policy N2C: Mitigate noise created by new transportation noise sources consistent with the levels specified in Table 5-4 in outdoor activity areas and interior spaces of existing noise-sensitive land uses.</p>	<p>Project-related noise impacts and mitigation measures are identified in Section 5.5.4.</p>
<p>Policy N2E: Require acoustical analysis for noise-sensitive land uses proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 5-4 or the performance standard of Table 5-5 to determine mitigation for inclusion in the project design. Single-family dwellings are excluded from this review.</p>	<p>The acoustical analysis was completed as a part of the EIR. Mitigation measures are included in this section. Impacts were found to be less than significant.</p>



TABLE 5.5-7 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Noise

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy N2F:</i> Minimize motor vehicle noise impacts from streets and highways through proper route location and sensitive roadway design by employing the following strategies:</p> <ul style="list-style-type: none"> • Consider the impacts of truck routes, the effects of a variety of truck traffic, and future motor vehicle volumes on noise levels adjacent to master planned roadways when improvements to the circulation system are planned. • Mitigate traffic volumes and vehicle speed through residential neighborhoods. • Work closely with Caltrans in the early stages of highway improvements and design modifications to ensure that proper consideration is given to potential noise impacts in the City. 	<p>The Project would minimize motor vehicle impacts from streets and highways with the implementation of MM 5.5-2. The Project proposes a residential development with park uses and open space and would not conflict with implementation of this policy.</p>
<p><i>Policy N2G:</i> Enforce existing applicable sections of the California Vehicle Code related to vehicle or equipment mufflers and modified exhaust systems.</p>	<p>As stated above, the Project proposes a residential development with park uses and open space and would not conflict with implementation of this policy.</p>
<p><i>Policy N2I:</i> Require that development in the vicinity of Redding Municipal Airport and Benton Airpark complies with the noise standards of the Comprehensive Land Use Plan for each facility.</p>	<p>The Project site is approximately 1.3 miles away from Benton Airpark and outside of the 60 CNEL and 55 CNEL noise contour; refer to Section 5.5-3.</p>

Source: *City of Redding General Plan*, October 2000.



SIGNIFICANCE OF CHANGES IN TRAFFIC NOISE LEVELS

If the ambient noise environment is quiet and the new noise source greatly increases the noise exposure, an impact may occur even though a criterion level might not be exceeded. Policy N2D of the *General Plan* establishes standards for significant increases in noise levels from mobile sources. The Project would create a significant impact for traffic noise levels when the following occurs:

- An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB Ldn;
- An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 dB Ldn;
- An increase of the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB Ldn.

SIGNIFICANCE OF CHANGES IN CUMULATIVE TRAFFIC NOISE LEVELS

The Project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The combined effects compares the "cumulative with project" condition to "existing" conditions to account for the traffic noise increase due to the proposed Project and traffic due to projects in the cumulative projects list. The following criteria have been utilized to evaluate the combined effect of the cumulative noise increase.

- *Combined Effects:* the cumulative with project noise level (Cumulative With Project Increase Above Ambient) causes the following:
 - An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB Ldn;
 - An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 dB Ldn; and
 - An increase of the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB Ldn.

Although there may be a significant noise increase due to the proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed Project. The following criteria have been utilized to evaluate the incremental effect of the cumulative noise increase.

- *Incremental Effects:* a project increases the ambient (2030 No Project) noise level by 1 dB or more (2030 Increase Above Ambient).



5.5.4 IMPACTS

Noise impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.5-1 GRADING AND CONSTRUCTION WITHIN THE PROJECT AREA WOULD RESULT IN TEMPORARY NOISE IMPACTS ON NEARBY SENSITIVE RECEPTORS.

Impact Analysis: Construction activities have a short and temporary duration, lasting from a few days to a period of several months. Groundborne noise and other types of construction-related noise impacts would typically occur during the initial site preparation, which can create the highest levels of noise. Generally, site preparation has the shortest duration of all construction phases. Activities that occur during this phase include earthmoving and soils compaction. High groundborne noise levels and other miscellaneous noise levels can occur during this phase by the operation of heavy-duty trucks, backhoes, and other heavy-duty construction equipment. Sources of man-made vibration often result from the use of heavy-duty construction equipment.

In addition to construction noise from a Project site, the construction periods would also cause increased noise along access routes to the site due to movement of equipment and workers on the site. The primary heavy construction equipment and vehicles are expected to be moved on-site during the initial construction period and staged on-site; therefore resulting in a less than significant short-term noise impact along nearby roadways. Daily transportation of construction workers would not cause a significant effect, since this traffic would not be a substantial percentage of current daily volumes in the area and would not increase traffic noise levels by more than one dBA¹.

On-Site Construction Activities

The site excavation and grading phase would be the noisiest construction phase. High groundborne noise levels and other miscellaneous noise levels can be created by the operation of heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, compactors, scrapers, and other heavy-duty construction equipment. Table 5.5-8, MAXIMUM NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT, indicates the noise levels for equipment that would be used throughout the construction process.

In order to estimate the "worst case" construction noise levels that may occur at an existing noise-sensitive receptor, the combined construction equipment noise levels have been calculated for each construction sub-phase (grading, trenching, paving, and building). Operating cycles for construction equipment used during these phases may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). These estimations of noise levels take into account the distance to the receptor, attenuation from molecular absorption, and anomalous excess attenuation.

¹ California Department of Transportation, *Traffic Noise Analysis Protocol*, August 2006. Traffic volumes typically need to double to create a 1 dBA increase in noise levels.



**TABLE 5.5-8
 Maximum Noise Levels Generated by Construction Equipment**

Type of Equipment	Acoustical Use Factor ¹ (percent)	Lmax at 50 Feet (dBA)
Air Compressor	40	78
Backhoe	40	78
Cement Mixer	50	80
Excavator	40	81
Loader	40	79
Tractor	40	84
Truck	40	75
Fork Lift	40	75
Backhoe	40	78
Grader	40	85
Scraper	40	84
Roller	20	80
Plate Compactor	20	83
Water Truck	40	80
Other Equipment (greater than five horse power)	50	85

Note:

1. Acoustical use factor (percent): estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, Roadway Construction Noise Model (FHWA-HEP-05-054), January 2006; refer to Appendix 15.4, NOISE DATA.

Table 5.5-9, CONSTRUCTION AVERAGE Leq (dBA) NOISE LEVELS BY RECEPTOR DISTANCE AND CONSTRUCTION PHASE, provides a description of construction noise levels during specific construction phases. The average noise levels presented in Table 5.5-9 are based on the quantity, type, and Acoustical Use Factor for each type of equipment that would be used during each construction phase. As described in Section 3.0, PROJECT DESCRIPTION, the proposed Project involves eight separate construction phases over eight years. As a result, Table 5.5-9 provides the loudest construction activities for each of the phases. Each phase would occur in a separate year and the completion of the initial phases would create new sensitive receptors for the later construction phases. The distances indicated in Table 5.5-9 reflect the construction area fore each phase and the proximity to existing and new on-site sensitive receptors. Figure 5.5-4, PHASING PLAN, illustrates the location of each proposed construction phase.



TABLE 5.5-9
Construction Average Leq (dBA) Noise Levels by
Receptor Distance and Construction Phase

Description	Receptor Locations		Estimated Construction Noise Level ²	Estimated Interior Construction Noise Level ³	Speech Interference Criteria	Exceed Criteria?
	Direction	Distance (feet) ¹				
Phase 1						
(52 Dwelling Units)	North	5,000	45.6	25.6	70 dBA	No
	South	1,900	54.0	34.0	70 dBA	No
	East	350	68.7	48.7	70 dBA	No
	West	6,600	43.2	23.2	70 dBA	No
Phase 2						
(56 Dwelling Units)	North	5,000	45.6	25.6	70 dBA	No
	South	2,300	52.4	32.4	70 dBA	No
	East	600	64.0	44.0	70 dBA	No
	West	6,000	44.0	24.0	70 dBA	No
Phase 3						
(54 Dwelling Units)	North	5,000	45.6	25.6	70 dBA	No
	South	2,300	52.4	32.4	70 dBA	No
	East	50	85.6	65.6	70 dBA	No
	West	4,500	46.5	26.5	70 dBA	No
Phase 4						
(49 Dwelling Units)	North	5,000	51.9	31.9	70 dBA	No
	South	2,300	81.2	61.2	70 dBA	No
	East	50	84.7	64.7	70 dBA	No
	West	4,000	46.7	26.7	70 dBA	No
Phase 5						
(47 Dwelling Units)	North	2,200	44.8	24.8	70 dBA	No
	South	75	51.6	31.6	70 dBA	No
	East	1,900	84.8	64.8	70 dBA	No
	West	3,300	46.8	26.8	70 dBA	No
Phase 6						
(96 Dwelling Units)	North	100	79.6	59.6	70 dBA	No
	South	1,200	58.0	38.0	70 dBA	No
	East	400	67.5	47.5	70 dBA	No
	West	300	70.0	50.0	70 dBA	No



TABLE 5.5-9 (Continued)
Construction Average Leq (dBA) Noise Levels by
Receptor Distance and Construction Phase

Description	Receptor Locations		Estimated Construction Noise Level ²	Estimated Interior Construction Noise Level ³	Speech Interference Criteria	Exceed Criteria?
	Direction	Distance (feet) ¹				
Phase 7						
(22 Dwelling Units)	North	4,500	46.5	26.5	70 dBA	No
	South	60	84.0	64.0	70 dBA	No
	East	60	84.0	64.0	70 dBA	No
	West	60	84.0	64.0	70 dBA	No
Phase 8						
(64 Dwelling Units)	North	4,500	46.5	26.5	70 dBA	No
	South	400	67.5	47.5	70 dBA	No
	East	800	61.5	41.5	70 dBA	No
	West	100	79.6	59.6	70 dBA	No

dBA = A weighted decibel

Notes:

- ¹ Distance is an approximation to the nearest sensitive land use adjacent to an active construction zone. Uses to the north, south, east, and west are residential and open space. The nearest existing residential unit is approximately 310 feet to the east of the Project site.
- ² Derived from the Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, January 2006; refer to Appendix 15.4, NOISE DATA.
- ³ A typical building can reduce noise levels by 20 dBA with the windows closed.² This assumes all windows and doors are closed, thereby attenuating the exterior noise levels by 20 dBA.

Source: Federal Highway Administration, *Roadway Construction Noise Model (FHWA-HEP-05-054)*, January 2006; refer to Appendix 15.4, NOISE DATA.

² United States Department of Housing and Urban Development, *The Noise guidebook*, undated.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Phasing Plan

Figure 5.5-4



As shown in Table 5.5-9, the clearing and demolition activities would be the loudest construction activities for the majority of the construction phases. The clearing and demolition activities would involve mostly site preparation activities. Construction equipment utilized during this phase would include tractors, backhoes, concrete saws, and bulldozers. The Federal Highway Administration Roadway Construction Noise Model (FHWA-HEP-05-054) (RCNM) was used for the prediction of construction noise. Because construction activities are often conducted in close proximity to residences and businesses, construction noise must be controlled and monitored to avoid impacts on surrounding communities. RCNM provides a construction noise model to easily predict construction noise levels and determine compliance with noise limits for a variety of construction noise projects or varying complexity.

Section 18.40.100(F)(2) of the RMC states that construction activities are prohibited during the hours of 7:00 p.m. and 6:00 a.m. (weekdays) during May 15 through September 15. Weekday construction activities between September 16 and May 14 are prohibited between 7:00 p.m. and 7:00 a.m. On weekends and holidays, construction activities are prohibited between 8:00 p.m. and 9:00 a.m. throughout the year. For construction noise, a "substantial" noise increase can be defined as interference with activities during the day and night. One indicator that construction noise could interfere with daytime activities would be speech interference. As the City does not have quantitative guidelines for construction noise, the following criteria is utilized in the analysis to define relative construction-related noise impacts:

- **Speech Interference Criteria.** Speech Interference Level was designed as a simplified substitute for the Articulation Index. It was originally defined as the average of the now obsolete octave-band sound pressure levels in the 600-1200, 1200-2400, and 2400-4800 Hertz (Hz) octaves. At the present time, Speech Interference Level, based upon the octave band levels at the preferred frequencies of 500, 1000, 2000, and 4000 Hz, is considered to provide a better estimate of the masking ability of a noise. As Speech Interference Level does not take the actual speech level into account, the associated masking effect depends upon vocal effort and speaker-to-listener distance. Speech spoken with slightly more vocal effort can be understood well, when the noise level is 65 dBA. A typical building can reduce noise levels by 20 dBA with windows closed. This noise reduction could be maintained only on a temporary basis in some cases, since it assumes windows would remain closed at all times. Therefore, this analysis utilizes an interior level of 65 dBA as a criterion level for determining significance for construction related activities in the absence of an adopted specific construction noise related threshold by the City of Redding.

Construction activities would expose adjacent receptors to worst case interior noise levels of:

- 23.2 dBA to 48.7 dBA during Phase 1;
- 24.0 dBA to 44.0 dBA during Phase 2;
- 25.6 dBA to 64.0 dBA during Phase 3;
- 26.7 dBA to 64.7 dBA during Phase 4;
- 24.8 dBA to 64.8 dBA during Phase 5;
- 38.0 dBA to 59.6 dBA during Phase 6;
- 26.5 dBA to 65.6 dBA during Phase 7; and
- 26.5 dBA to 59.6 dBA during Phase 8.

Based on the above assessment of anticipated construction noise levels associated with the proposed Project, construction activities are not anticipated to expose surrounding sensitive receptors to noise levels in excess of the Speech Interference Criteria (70 dBA) during construction.



Construction-Related Vibration Impacts

Project construction can generate varying degrees of ground-borne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach levels that damage structures.

The Federal Transit Administration (FTA) has published standard vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.2 inch/second) appears to be conservative even for sustained pile driving. Pile driving levels often exceed 0.2 inch/second at distances of 50 feet, and 0.5 inch/second at 25 feet without any apparent damage to buildings.

The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. The vibration levels produced by construction equipment are illustrated in Table 5.5-10, TYPICAL VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT.

TABLE 5.5-10
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)	Approximate peak particle velocity at 75 feet (inches/seconds)
Large bulldozer	0.644	0.124
Loaded trucks	0.170	0.033
Small bulldozer	0.089	0.017
Auger/drill rigs	0.089	0.017
Jackhammer	0.076	0.015
Vibratory hammer	0.035	0.007
Vibratory compactor/roller	0.003	0.001

Notes:

1. Peak particle ground velocity measured at 25 feet unless noted otherwise.
2. Root mean square amplitude ground velocity in decibels (VdB) referenced to 1 micro-inch/second.

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006.



Ground-borne vibration decreases rapidly with distance. As indicated in Table 5.5-10, based on the Federal Transit Administration data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.644 inch-per-second peak particle velocity (PPV) at 25 feet from the source of activity. At 75 feet from the source of activity, vibration velocities range from 0.001 to 0.124 inch-per-second PPV. With regard to the proposed Project, ground-borne vibration would be generated primarily during site clearing and grading activities on-site and by off-site haul-truck travel. The Project Applicant has indicated that pile driving activities would not be required for construction activities. The PPV from bulldozer and heavy truck operations is shown to be 0.089 inch-per-second PPV and 0.076 inch-per-second PPV, respectively, at a distance of 25 feet. As the closest sensitive receptors range from approximately 50 to 350 feet away (depending on construction phase) and each of these values is below the 0.2 inch-per-second PPV significance threshold, vibration impacts associated with construction would be less than significant and no mitigation measures are required.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

OFF-SITE MOBILE SOURCE IMPACTS

5.5-2 PROJECT IMPLEMENTATION WOULD GENERATE ADDITIONAL VEHICULAR TRAVEL ON THE SURROUNDING ROADWAY NETWORK, THEREBY RESULTING IN PERMANENT NOISE LEVEL INCREASES.

Impact Analysis: Future development within the area would result in additional traffic on adjacent roadways, thereby increasing vehicular noise in the vicinity of existing and proposed land uses. The analysis of traffic noise levels on existing noise-sensitive uses outside the Project site is based on the *Traffic Impact Analysis Report*, prepared by Omni-Means, Ltd. (February 2009). Two traffic scenarios were modeled to demonstrate the Project's net acoustical increase over 2015 ambient (No Project) conditions and year 2030 conditions. As previously discussed, Policy N2D of the *General Plan* establishes standards for significant increases in noise levels from mobile sources. The Project would create a significant impact for traffic noise levels when the following occurs:

- An increase of the existing ambient noise level ("No Project") by 5 dB or more, where the existing ambient level is less than 60 dB Ldn;
- An increase of the existing ambient noise level ("No Project") by 3 dB or more, where the existing ambient level is 60 to 65 dB Ldn;
- An increase of the existing ambient noise level ("No Project") by 1.5 dB or more, where the existing ambient level is greater than 65 dB Ldn.



Future Near-Term Conditions (2015)

Table 5.5-11, FUTURE NEAR-TERM NOISE SCENARIOS, depicts what would be heard at approximately 100 feet from the roadway centerline. According to Table 5.5-11, under the 2015 Without Project condition, off-site noise levels would range from approximately 52.9 dBA to 66.5 dBA. The highest noise levels under 2015 Without Project condition would occur along Placer Street (between Pleasant Street and Airpark Drive). Under the 2015 With Project condition, noise levels would range from approximately 52.9 to 66.6 dBA. Similar to the 2015 Without Project condition, the highest noise levels would occur along Placer Street (between Pleasant Street and Airpark Drive).

Table 5.5-11 also compares the 2015 Without Project condition to the 2015 With Project condition. The greatest noise increase (1.0 dBA) would occur along Placer Street (west of Buenaventura Boulevard) and Buenaventura Boulevard (between Eureka Way and Sunflower Drive). Several residences are located along this roadway segment. Under the 2015 Without Project condition, this roadway segment would be 65.1 dBA and 53.4 dBA, respectively. Since the 2015 noise level increase is less than 1.5 dBA (i.e., 1.0 dBA), impacts would be considered less than significant. Therefore, a significant impact on existing off-site receptors would not occur.

Future Long-Term Conditions (2030)

Table 5.5-12, FUTURE LONG-TERM NOISE SCENARIO, depicts what would be heard at approximately 100 feet from the roadway centerline. According to Table 5.5-12, under the 2030 Without Project condition, off-site noise levels would range from approximately 52.9 dBA to 67.0 dBA. The highest noise levels under the 2030 Without Project condition would occur along Placer Street (between Buenaventura Boulevard and Airpark Drive).

Under the 2030 With Project condition, noise levels would range from approximately 51.6 to 67.1 dBA. Similar to the 2030 Without Project condition, the highest noise levels would occur along Placer Street (between Buenaventura Boulevard and Airpark Drive).

Table 5.5-12 also compares the 2030 Without Project condition to the 2030 with Project condition. The highest noise increase (0.8 dBA) would occur along Eureka Way (between Lower Springs Road and Ridge Drive). Under the 2030 Without Project condition, this roadway segment would be 61.8 dBA. Since the 2030 Without Project noise level would be between 60 dBA and 65 dBA, a noise level increase of greater than 3 dBA would be considered a significant impact along this local roadway. However, the resultant 2030 With Project noise level along this roadway would be 62.6 dBA. Since the resultant noise level results in an increase of less than 3 dBA, increases along the roadway segments analyzed would be considered less than significant.

Overall, 2030 With Project noise levels would range from 51.6 to 67.1 dBA. The proposed Project would not cause a significant increase in traffic noise levels and cause an exceedance in City standards. Therefore, a significant impact to existing off-site receptors would not occur and impacts would be less than significant.



**TABLE 5.5-11
 Future Near Term Noise Scenarios (2015)**

Roadway Segment	2015 No Project				2015 Plus Project				Difference In dBA @ 100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)		ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)				
			60 Ldn Noise Contour	70 Ldn Noise Contour			60 Ldn Noise Contour	70 Ldn Noise Contour			
EUREKA WAY (SR-299)											
West of Lower Springs Road	8,190	62.7	172	80	37	8,390	62.8	175	81	38	0.1
Between Lower Springs Road and Cemetery Drive	9,755	63.4	194	90	42	11,330	64.1	214	99	46	0.7
Between Cemetery Drive and Ridge Drive	9,755	60.8	138	64	30	11,330	61.4	153	71	33	0.6
Between Ridge Drive and Buena Ventura Boulevard	9,755	60.5	138	64	30	11,330	61.2	153	71	33	0.7
Between Buena Ventura Boulevard and Sunset Drive	15,098	62.5	185	86	40	16,338	62.9	195	91	42	0.4
Between Sunset Drive and Overhill Drive	16,075	62.7	193	90	42	17,315	62.7	193	90	42	0
Between Overhill Drive and Almond Avenue	15,043	65.5	467	148	47	16,235	65.8	504	159	50	0.3
Placer Street											
West of Buena Ventura Boulevard	15,170	65.1	410	130	41	16,735	66.1	521	165	52	1.0



TABLE 5.5-11 (Continued)
Future Near Term Noise Scenarios (2015)

Roadway Segment	2015 No Project					2015 Plus Project					Difference In dBA @ 100 Feet from Roadway	
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)				
			60 Ldn Noise Contour	65 Ldn Noise Contour	70 Ldn Noise Contour			60 Ldn Noise Contour	65 Ldn Noise Contour	70 Ldn Noise Contour		
Between Buenaventura Boulevard and Pleasant Street	16,333	66.1	508	161	51	17,803	66.5	554	175	55	0.4	
Between Pleasant Street and Airpark Drive	18,335	66.5	570	180	57	18,735	66.6	583	184	58	0.1	
Lower Springs Road												
South of Eureka Way (SR-299)	860	52.9	38	18	8	860	52.9	38	18	8	0	
Buenaventura Boulevard												
Between Placer Street and Lakeside Drive	10,038	64.2	312	99	31	11,183	64.7	347	110	35	0.5	
Between Lakeside Drive and Eureka Way (SR- 299)	11,245	60.8	140	65	30	12,033	61.7	159	74	34	0.9	
Between Eureka Way (SR-299) and Sunflower Drive	2,120	53.4	26	8	3	2,650	54.4	33	10	3	1.0	
North of Sunflower Drive	N/A	N/A	N/A	N/A	N/A	2,120	53.4	26	8	3	N/A	

ADT = average daily trips; dBA = A- weighted decibels; Ldn = day/night average noise level; N/A = Not Applicable; Buenaventura Boulevard would be extended north of Sunflower Drive as part of the proposed Project.

Source: Omni-Means, LTD, Engineers and Planners, Salt Creek Heights Traffic Impact Analysis Report, June 2009.



**TABLE 5.5-12
Future Long Term Noise Scenario (2030)**

Roadway Segment	2030 No Project					2030 Plus Project					Difference In dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to:			ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to:			
			60 Ldn Noise Contour	65 Ldn Noise Contour	70 Ldn Noise Contour			60 Ldn Noise Contour	65 Ldn Noise Contour	70 Ldn Noise Contour	
EUREKA WAY (SR-299)											
West of Lower Springs Road	10,040	63.6	197	92	43	10,340	63.7	201	93	43	0.1
Between Lower Springs Road and Cemetery Drive	12,330	64.5	226	105	49	14,715	65.2	255	118	55	0.7
Between Cemetery Drive and Ridge Drive	12,330	61.8	162	75	35	14,715	62.6	182	85	39	0.8
Between Ridge Drive and Buena Ventura Boulevard	12,330	61.6	162	75	35	14,715	62.3	182	85	39	0.7
Between Buena Ventura Boulevard and Sunset Drive	20,008	63.7	223	104	48	22,023	64.2	238	111	51	0.5
Between Sunset Drive and Overhill Drive	18,598	63.4	213	99	46	20,540	63.8	228	106	49	0.4
Between Overhill Drive and Almond Avenue	16,843	66.0	523	165	52	18,708	66.5	582	184	58	0.5
Placer Street											
West of Buena Ventura Boulevard	18,080	66.5	562	178	56	18,155	66.5	564	178	56	0
Between Buena Ventura Boulevard and Pleasant Street	20,000	67.0	622	197	62	20,648	67.1	642	203	64	0.1
Between Pleasant Street and Airpark Drive	20,625	67.0	641	203	64	21,235	67.1	660	209	66	0.1



TABLE 5.5-12 (Continued)
Future Long Term Noise Scenario (2030)

Roadway Segment	2030 No Project				2030 Plus Project				Difference In dBA @ 100 Feet from Roadway		
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to:		ADT	dBA @ 100 Feet from Roadway Centerline	Distance from Roadway Centerline to:				
			60 Ldn Noise Contour (Feet)	70 Ldn Noise Contour (Feet)			60 Ldn Noise Contour (Feet)	70 Ldn Noise Contour (Feet)			
Lower Springs Road											
South of Eureka Way (SR-299)	870	52.9	39	18	8	870	52.9	39	18	8	0
Buena Ventura Boulevard											
Between Placer Street and Lakeside Drive	14,080	65.7	438	139	44	15,165	66.0	472	149	47	0.3
Between Lakeside Drive and Eureka Way (SR-299)	15,613	62.8	189	88	41	16,810	63.1	199	92	43	0.3
Between Eureka Way (SR-299) and Sunflower Drive	8,645	59.5	107	34	11	9,080	59.7	112	35	11	0.2
North of Sunflower Drive	N/A	N/A	N/A	N/A	N/A	1,400	51.6	17	5	2	N/A

ADT = average daily trips; dBA = A weighted decibels; Ldn = day/night average noise level; N/A = Not Applicable; Buena Ventura Boulevard would be extended north of Sunflower Drive as part of the proposed Project.

Source: Omni-Means, LTD, Engineers and Planners, Salt Creek Heights Traffic Impact Analysis Report, June 2009.



On-Site Mobile Source Noise

As indicated in Table 5.5-13, FUTURE ON-SITE NOISE LEVELS (CUMULATIVE PLUS PROJECT), cumulative mobile source noise levels along Buenaventura Boulevard would be below the City's 60 dBA exterior standard and below the 45 dBA interior standard. However, cumulative mobile source noise levels would exceed the City's exterior noise standard of 60 dBA Ldn along Eureka Way (SR-299), west of Lower Springs Road. As a result, the units proposed along Eureka Way (SR-299), from the western site boundary to the proposed Road A, would require a soundwall separating the residential lots and the roadway. It should be noted that the City's *Subdivision Ordinance*, RMC §17.38.100, requires a minimum solid block fence or alternative barrier at the street right-of-way where a subdivision abuts an arterial street or non-access collector street. Based on RMC §17.38.100, the subdivision will be required to construct a minimum six-foot barrier beginning at the site's western limits along the Eureka Way (SR-299) right-of-way (Project boundary) extending easterly to lot 37. Where the rear property line of lot 37 deviates from the Eureka Way (SR-299) right-of-way, the perimeter wall would follow the rear residential property lines (lots 37 through 44) to Road A. MM 5.5-2 recommends barrier materials to achieve the appropriate abatement, including the requirement to conduct a final barrier assessment confirming the final height and location of the barrier.

Barriers, such as walls, typically attenuate roadway noise by 8 to 10 dBA.³ Therefore, roadway noise levels along Eureka Way (SR-299), west of Lower Springs Road, for outdoor activity areas would be reduced to between 53.4 and 55.4 dBA. It should be noted that even without a perimeter wall along the roadway, interior noise levels would be below the City's standard of 45 dBA. Therefore, with implementation of MM 5.5-2, on-site mobile source noise impacts would be less than significant.

**TABLE 5.5-13
 Future On-Site Noise Levels (Cumulative Plus Project)**

Roadway Segment	ADT	Exterior Noise Level	Exceed Exterior Threshold?	Interior Noise Level	Exceed Interior Threshold?
Cumulative Plus Project Conditions					
Eureka Way (SR-299): West of Lower Springs Road	14,715	63.4	Yes	43.4	No
Buenaventura Boulevard: Between Eureka Way (SR-299) and Sunflower Drive	9,080	59.7	No	39.7	No
Buenaventura Boulevard: North of Sunflower Drive	1,400	51.6	No	31.6	No

ADT = average daily trips; dBA = A-weighted decibels; Ldn = day/night average

Notes:

1. A 20 dBA noise attenuation rate was utilized to determine the interior noise standards.

Source: Noise modeling is based upon traffic data provided by Omni-Means, LTD, Engineers and Planners, *Salt Creek Heights Traffic Impact Analysis Report*, June 2009.

³ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, October 1998.



Mitigation Measures:

MM 5.5-2 In accordance with RMC §17.38.100, the proposed Project shall construct a minimum six-foot high perimeter block wall beginning at the site's western limits along Eureka Way (SR-299) extending easterly along the site's boundary to lot 37. At lot 37 the perimeter block wall shall extend along the rear residential property lines (lots 37 through 44) to Road A and shall have a return along Road A of approximately 30 feet. The perimeter block wall must block the line of sight at ground level from the dwelling units facing Eureka Way (SR-299). Acceptable materials for the construction of the barrier shall have a density of 3.5 pounds per square foot of surface area and be constructed of masonry materials. The exterior finish of the wall shall be determined in consultation with the City's Development Services Department. The final configuration and height of the barrier shall be confirmed by a qualified acoustical professional prior to the issuance of occupancy permit, in consultation with the City's Development Services Department.

Level of Significance: Less than significant impact with mitigation incorporated.

STATIONARY SOURCE IMPACTS

5.5-3 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD RESULT IN THE GENERATION OF ON-SITE NOISE ASSOCIATED WITH FUTURE RESIDENTIAL UNITS AS WELL AS MECHANICAL EQUIPMENT AND LANDSCAPE MAINTENANCE.

Impact Analysis: The following discusses potential stationary source noise impacts associated with the proposed Project.

Residential Areas

Future development of residential lots would create stationary noise typical of any new residential development. Noise that is typical of residential areas includes such things as children playing, pet noise, amplified music, car repair, pool and spa equipment operation, woodworking, and home repair activities. Noise from residential stationary sources would primarily occur during the "daytime" activity hours of 7:00 a.m. to 7:00 p.m. Furthermore, the residences would be required to comply with the noise standards set forth within the *General Plan*. The *General Plan* and RMC state that exterior noise levels in residential property shall not exceed the basic noise standard of 55 dBA at the residential property line between 7:00 a.m. and 7:00 p.m. thus, noise impacts from the residential uses are anticipated to be less than significant in this regard.

Mechanical Equipment

Mechanical equipment such as heating, ventilation, and air conditioning (HVAC) units would be included as part of future residential and commercial development. Compliance with the *General Plan* and RMC would minimize stationary noise impacts through restricting roof top air conditioning, heating, and ventilation equipment.



Landscaping Maintenance

Future development of the residential and commercial uses within the Project area would introduce new landscaping areas requiring periodic maintenance. Noise generated by gasoline-powered lawnmowers is estimated to be approximately 70 dBA at a distance of 5 feet from the source. Therefore, at 50 feet, noise from a gas lawnmower would be 40 dBA and would meet City noise standards even if (although unlikely) the lawnmower were operated near the same sensitive receptor for a full hour. For each doubling of distance from a point noise source (i.e., the lawnmower), the sound level decreases by 6 dBA. As the operation of maintenance activities would occur only during daytime hours and for brief periods of time, a less than significant impact would result.

Airport Noise

Benton Airpark is located approximately 1.3 miles to the southeast. The Project site would be outside of the airport's 60 CNEL noise contour and the 55 CNEL noise contour. Additionally, due to the Project site's distance from the airport, the proposed Project would not be located within an area exposed to aircraft noise of 55 CNEL and higher. Therefore, the proposed Project would not expose people residing or working in the Project area to excessive aircraft noise levels.

Athletic Fields

The Project proposes a soccer field, softball field, basketball courts, a playground, and a frisbee golf course in the central portion of the Project site. The athletic fields could expose surrounding receptors to noise impacts from events at these facilities, primarily from crowd noise.

For soccer games, the focal point is variable, with considerable excitement occurring when the ball is near either goals, but with the sound of the players spread out over the field and the sound of spectators spread out along the sidelines. Noise sources associated with soccer events would primarily consist of occasional shouting and cheering of the players and spectators during the contests and practices. Based on data collected at various soccer venues, average noise levels generated during games are approximately 58 dBA at a distance of 50 feet from the focal point or effective noise center of the playing field.

The distance between the proposed basketball courts and the residences to the northwest and east would be approximately 300 feet. Typically, noise levels when basketball courts are in use range from 40 to 50 dBA at a distance of 100 feet from the focal point or effective noise center of the courts. Using the standard attenuation rate for a soft site, basketball court noise levels at the property line of residences situated to the northwest and east would be approximately 40.5 dBA. Therefore, the City's 60 dBA noise standard would not be exceeded and a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

CUMULATIVE IMPACTS

5.5-4 THE PROPOSED PROJECT, IN CONJUNCTION WITH CUMULATIVE GROWTH WOULD INCREASE THE AMBIENT NOISE LEVEL IN THE PROJECT VICINITY.



Impact Analysis: Cumulative noise impacts resulting from construction, long-term operations, and vehicular noise are discussed below.

Cumulative Construction Noise

A list of recently approved and proposed projects can be found in Section 4.0, BASIS OF CUMULATIVE ANALYSIS. Short-term (construction) noise is a localized activity and would affect only land uses that are immediately adjacent to the Project area. In addition, most of the cumulative projects are relatively far away and would not result in a cumulative noise impact. It is likely that each of the related projects would have to comply with the local noise ordinance, as well as mitigation measures that may be prescribed pursuant to CEQA provisions that require significant impacts to be reduced to the extent feasible. The nearest related project would be the Matrix Subdivision project (adjacent to the Project site on Eureka Way [SR-299]).

Although the timing of this cumulative project is not yet known, it could be constructed concurrently with the proposed Project. However, since the proposed Project is approximately 300 feet away from the active construction areas of the proposed Project, it would not significantly contribute to construction noise in the area based on distance attenuation. The construction analysis for the proposed Project assumed that the closest sensitive receptor to the south would be approximately 60 feet away and found that impacts would be less than significant with the implementation of mitigation measures. It should be noted, that this analysis did not account for construction noise being masked by traffic along Eureka Way (SR-299). Project construction activities would be temporary in each phase of project construction and would not occur along the southern portion of the project site for the entire construction period. Additionally, as with the proposed Project, cumulative projects would be required to implement mitigation measures (i.e., adequate mufflers and properly maintained equipment) to reduce noise impacts. Thus, the cumulative construction noise impacts would be less than significant.

Cumulative Operational Noise

The proposed Project would introduce the use of stationary equipment that would increase noise levels within the area. Based on the analysis, with mitigation, impacts would be less than significant. Additionally, the proposed Project would not result in stationary long-term equipment that would significantly affect surrounding sensitive receptors. As operational noise generated by the proposed Project would be less than significant, the proposed Project would therefore not be cumulatively considerable. Furthermore, future development proposals within the City of Redding would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify necessary attenuation measures, where appropriate. Thus, cumulative noise exposure for long-term operations would be considered a less than significant impact.

Cumulative Mobile Noise

The cumulative mobile noise analysis is conducted in a two step process. First, the combined effects from both the proposed Project and other projects are compared. Second, for combined effects that are determined to be cumulatively significant, the Project's incremental effects are analyzed. The Project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds perception level (i.e., auditory level increase) threshold. The combined effects compares the "cumulative with Project" condition to "existing" conditions to account for the traffic noise increase due to the proposed Project and traffic due to projects based on the cumulative projects list. The following criteria have been utilized to evaluate the combined effect of the cumulative noise increase:



Combined Effects: The cumulative with project noise level (Cumulative With Project Increase Above Ambient) causes the following:

- An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB Ldn
- An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 dB Ldn
- An increase of the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB Ldn

Although there may be a significant noise increase due to the proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed Project. The following criteria have been utilized to evaluate the incremental effect of the cumulative noise increase:

Incremental Effects: A project increases the ambient (2030 No Project) noise level by 1 dB or more (2030 Increase Above Ambient).

Noise by definition is a localized phenomenon, and drastically reduces as distance from the source increases. Consequently, only projects and growth due to occur in the general vicinity of the Project site would contribute to cumulative noise impacts. Table 5.5-14, CUMULATIVE NOISE SCENARIO, lists the traffic noise effects along roadway segments in the Project vicinity for Existing Conditions, Year 2030 No Project conditions, and Year 2030 With Project conditions, including incremental and net cumulative impacts.

First, it must be determined whether the Cumulative With Project Increase Above Existing Conditions (*Combined Effects*) is exceeded. Per Table 5.5-14, this criteria is exceeded along the following segments:

- Placer Street: Between Buenaventura Boulevard and Pleasant Street
- Placer Street: Between Pleasant Street and Airpark Drive
- Buenaventura Boulevard: Between Eureka Way (SR-299) and Sunflower Drive

Under the *Incremental Effects* criteria, a cumulative noise impact is defined by determining if the ambient (2030 No Project) noise level is increased by 1 dB or more. Based on the results of Table 5.5-14, there would not be any roadway segments that would result in significant impacts as they would not exceed both the Combined and Incremental Effects criteria. The proposed Project would not result in long-term mobile noise impacts based on project generated traffic as well as cumulative and incremental noise levels. Therefore, the proposed Project, in combination with cumulative background traffic noise levels, would result in a less than significant impact.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



TABLE 5.5-14
 Cumulative Noise Scenario

Roadway Segment	Existing	2030 No Project	2030 Plus Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	Difference In dBA Between Existing and 2030 Plus Project	Difference In dBA between 2030 No Project and 2030 Plus Project	
EUREKA WAY (SR-299)						
West of Lower Springs Road	62.1	63.6	63.7	1.6	0.1	No
Between Lower Springs Road and Cemetery Drive	63.0	64.5	65.2	2.2	0.7	No
Between Cemetery Drive and Ridge Drive	60.3	61.8	62.6	2.3	0.8	No
Between Ridge Drive and Buenaventura Boulevard	60.1	61.6	62.3	2.2	0.7	No
Between Buenaventura Boulevard and Sunset Drive	62.5	63.7	64.2	1.7	0.5	No
Between Sunset Drive and Overhill Drive	62.8	63.4	63.8	1	0.4	No
Between Overhill Drive and Almond Avenue	65.5	66.0	66.5	1	0.5	No
Placer Street						
West of Buenaventura Boulevard	65.1	66.5	66.5	1.4	0	No
Between Buenaventura Boulevard and Pleasant Street	65.0	67.0	67.1	2.1	0.1	No
Between Pleasant Street and Airpark Drive	65.3	67.0	67.1	1.8	0.1	No
Lower Springs Road						



TABLE 5.5-14 (Continued)
Cumulative Noise Scenario

Roadway Segment	Existing	2030 No Project	2030 Plus Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	dBA @ 100 Feet from Roadway Centerline	Difference In dBA Between Existing and 2030 Plus Project	Difference In dBA between 2030 No Project and 2030 Plus Project	
South of Eureka Way (SR-299)	52.8	52.9	52.9	0.1	0	No
Buena Ventura Boulevard						
Between Placer Street and Lakeside Drive	63.7	65.7	66	2.3	0.3	No
Between Lakeside Drive and Eureka Way (SR-299)	60.8	62.8	63.1	2.3	0.3	No
Between Eureka Way (SR-299) and Sunflower Drive	51.5	59.5	59.7	8.2	0.2	No
North of Sunflower Drive	N/A	N/A	51.6	N/A	N/A	No

dBA = A weighted decibels; N/A = Not Applicable; Buena Ventura Boulevard would be extended north of Sunflower Drive as part of the proposed Project.

Source: Omni-Means, LTD, Engineers and Planners, Salt Creek Heights Traffic Impact Analysis Report, June 2009.



5.6 AIR QUALITY

This section focuses on potential short-term air quality impacts associated with Project construction activities, and long-term local and regional air quality impacts associated with the Project operation. Information in this section is based primarily on the Air Quality Data (California Air Resources Board [CARB] 2004 through 2008); and the air quality analysis performed by RBF Consulting using methodologies and assumptions recommended by the Shasta County Air Quality Management District (SCAQMD). The complete air quality data is included within Appendix 15.5, AIR QUALITY DATA.

5.6.1 EXISTING CONDITIONS

SACRAMENTO VALLEY AIR BASIN

Geography

The City of Redding is located in the northern portions of the Sacramento Valley Air Basin (Basin), a broad, flat valley bounded by the coastal ranges to the west and the Sierra Nevada Mountains to the east. The entire air basin is about 200 miles long in a north-south direction, and has a maximum width of about 150 miles, although the valley floor averages only about 50 miles in width. The Basin includes Shasta, Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Yolo, Sacramento, the western portion of Placer, and the eastern portion of Solano counties.

The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and/or dispersion of air pollutants throughout the Basin.

Climate

The climate of the Project area is characterized by hot, dry summers and cool, wet winters. The weather within the Basin varies from north to south and east to west due to its large geographic area. During the summer months from mid-April to mid-October, significant precipitation is unlikely and temperatures range from 100 degrees Fahrenheit (°F) to the high 50s and low 60s. During the winter highs are typically in the 60s with lows in the 30s. This area is prone to relatively strong thunderstorms during the rainy season. Snow in the Project area is rare, often only lightly falling once or twice per year. The northern and eastern parts of the Basin have higher precipitation totals due to the higher latitude and the orographic lifting of the Sierra Nevada mountains producing more rainfall. The Sacramento Valley is often subject to temperature inversions that, coupled with topographic barriers and hot summer temperatures, create a high potential for air pollution problems. According to the City of Redding *General Plan* Air Quality Element¹, the Sacramento Valley Air Basin has the highest air pollution potential in the United States because the area has over 70 air inversion days per year.

¹ City of Redding Department of Planning and Community Development, Air Quality Element of the *General Plan*, 2000.



Wind

The Basin is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the northern portion of the Sierra Nevada Mountains. These mountain ranges reach heights in excess of 6,000 feet with peaks rising much higher. This provides a substantial physical barrier to locally created pollution as well as that transported northward on prevailing winds from the Sacramento Metropolitan area. Wind direction is primarily up- and down-valley due to the channeling effect of the mountains. During the summer months surface air movement is from the south, particularly during the afternoon hours. During the winter months wind direction is more variable.

LOCAL AMBIENT AIR QUALITY

Air Quality Monitoring Stations

The Shasta County Air Quality Management District (SCAQMD) monitors air quality at 37 monitoring stations throughout the Basin. The monitoring stations typically measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations.

The Redding - Health Department Building is the nearest air monitoring station to the Project site. This monitoring station measures Ozone (1- and 8- hour), PM_{10} , and $PM_{2.5}$. The nearest air monitoring station measuring Carbon Monoxide and Nitrogen Dioxide is the Chico - Manzanita Avenue Monitoring Station.

Pollutants Measured

The following air quality information briefly describes the various types of pollutants monitored at the Redding - Health Department Roof Monitoring Station and the Chico Manzanita Monitoring Station. Air quality data from 2004 through 2008 is provided in Table 5.6-1, LOCAL AIR QUALITY LEVELS.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all carbon monoxide emissions.

Carbon monoxide replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies) and patients with chronic hypoxemia (oxygen deficiency), as seen in high altitudes are most susceptible to the adverse effects of carbon monoxide exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death in confined spaces at very high concentrations. The State and Federal standard for CO is 9 ppm. The standards were not exceeded between 2004 and 2008 at the Chico-Manzanita Monitoring Station.

Nitrogen Dioxide. Nitrogen oxides (NO_x) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_x) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries and other industrial operations).



NO₂ can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO₂ concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

For NO₂, the Basin is designated as being in attainment under both State and Federal standards. From 2004 through 2008, there were no exceedances of the State standard of 0.25 ppm over one hour at the Chico-Manzanita Monitoring Station. The NO₂ ambient air quality standard was amended on February 22, 2007 to lower the State 1-hour standard to 0.18 ppm and establish a new Federal annual standard of 0.030 ppm.

TABLE 5.6-1
Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration ¹	Number of Days Standard Has Exceeded	
	California	Federal			State	Federal
Carbon Monoxide (CO) ³	9 ppm for 8 hours	9 ppm for 8 hours	2004	2.86 ppm	0	0
			2005	2.74	0	0
			2006	2.70	0	0
			2007	2.16	0	0
			2008	2.39	0	0
Ozone (O ₃) (1-Hour) ²	0.09 ppm for 1 hour	N/A ⁶	2004	0.131 ppm	2	1
			2005	0.102	3	0
			2006	0.107	2	0
			2007	0.089	0	0
			2008	0.090	0	0
Ozone (O ₃) (8-Hour) ²	0.07 ppm for 8 hours	0.075 ppm for 8 hours	2004	0.096 ppm	11	2
			2005	0.090	18	3
			2006	0.087	19	1
			2007	0.073	5	0
			2008	0.082	13	4
Nitrogen Dioxide (NO ₂) ³	0.18 ppm for 1-hour	0.030 ppm annual average	2004	0.056 ppm	0	N/A
			2005	0.048	0	
			2006	0.048	0	
			2007	0.046	0	
			2008	0.048	0	
Particulate Matter (PM ₁₀) ^{2,4,5}	50µg/m ³ for 24 hours	150 µg/m ³ for 24 hours	2004	76.0 µg/m ³	1	0
			2005	30.0	0	0
			2006	54.0	1	0
			2007	36.0	0	0
			2008	236.7	5	1
Particulate Matter (PM _{2.5}) ^{2,5}	No Separate State Standard	35 µg/m ³ for 24 hours	2004	26.0 µg/m ³	N/A	0
			2005	20.0		0
			2006	31.0		0
			2007	18.6		0
			2008	200.2		5



TABLE 5.6-1 (Continued)
Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration ¹	Number of Days Standard Has Exceeded	
	California	Federal			State	Federal

ppm=parts per million

µg/m³=micrograms per cubic meter

N/A=not applicable

PM₁₀=particulate matter 10 microns in diameter or less

PM_{2.5}=particulate matter 2.5 microns in diameter or less

Notes:

1. Maximum concentrations are measured over the same period as the California standard.
2. Redding - Health Department Roof Monitoring Station, located at 2630 Hospital Lane, Redding, CA 96001.
3. Chico - Manzanita Avenue Monitoring Station, located at 468 Manzanita Avenue, Chico, CA 95926.
4. PM₁₀ exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
5. PM₁₀ and PM_{2.5} exceedances are derived from the number of samples exceeded, not days.
6. The U.S. Environmental Protection Agency revoked the Federal 1-hour Standard in June of 2005. Statistics related to the revoked standard are shown in italics.

Source: *Aerometric Data Analysis and Management (ADAM) Air Quality Data Statistics*, California Air Resources Board, <http://www.arb.ca.gov/adam/welcome.html>

Ozone. Ozone (O₃) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratosphere (the "good" ozone layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is a photochemical pollutant, and needs volatile organic compounds (VOCs), NO_x, and sunlight to form; therefore, VOCs and NO_x are ozone precursors. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While ozone in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone (in the troposphere) can adversely affect the human respiratory system and other tissues. Ozone is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of ozone. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache and nausea.

The 1-hour O₃ levels ranged from 0.089 parts per million (ppm) to 0.131 ppm from 2004 to 2008 at the Redding - Health Department Roof Monitoring Station. The 8-hour O₃ levels between 2004 and 2008 ranged from 0.073 ppm to 0.096 ppm. The State 8-hour standard for O₃ is 0.07, and was approved by the California Air Resources Board (CARB) on April 28, 2005.



Coarse Particulate Matter (PM₁₀). PM₁₀ refers to suspended particulate matter which is smaller than 10 microns or ten one-millionths of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003 CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

The State standard for PM₁₀ is 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over 24 hours; this standard was exceeded 7 days at the Redding - Health Department Roof Monitoring Station between 2004 and 2008. The Federal standard for PM₁₀ is 150 $\mu\text{g}/\text{m}^3$ averaged over 24 hours; this standard was exceeded once between 2004 and 2008.

Fine Particulate Matter (PM_{2.5}). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less) both State and Federal PM_{2.5} standards have been created. Particulate matter impacts primarily affect infants, children, the elderly and those with pre-existing cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new PM_{2.5} standards. Industry ground challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final rule in the Federal Register that designates the Basin as a non-attainment area for Federal PM_{2.5} standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

At the Redding - Health Department Roof Monitoring Station, the PM_{2.5} standard was exceeded 5 days between 2004 and 2008. For PM_{2.5}, the Federal standard is 35 $\mu\text{g}/\text{m}^3$ over 24 hours. There is no separate State standard for PM_{2.5}.

Sulfur Dioxide. Sulfur dioxide (SO₂) is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with sulfur oxides (SO_x) and lead (Pb). Exposure of a few minutes to low levels of SO₂ can result in airway constriction in some asthmatics. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂.

The Basin is designated as an attainment area for both State and Federal SO₂ standards. SO₂ did not exceed Federal or State standards between 2004 and 2008.

Global Climate Change Gases. The natural process through which heat is retained in the troposphere is called the "greenhouse effect."² The greenhouse effect traps heat in the troposphere through a three fold process as follows: Short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and greenhouse gases in the upper atmosphere

² The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.



absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This “trapping” of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant greenhouse gases are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of greenhouse gases, scientists have established a Global Warming Potential (GWP)³ for each greenhouse gas based on its ability to absorb and re-radiate long wave radiation. The GWP of a gas is determined using carbon dioxide as the reference gas with a GWP of 1.

Greenhouse gases include, but are not limited to, the following:⁴

Water vapor (H₂O). Although water vapor has not received the scrutiny of other greenhouse gases, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively. The primary human related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than 1 percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel in Climate Change (IPCC) has not determined a GWP for water vapor.

Carbon dioxide (CO₂). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent.⁵ Carbon dioxide is the most widely emitted greenhouse gas and is the reference gas (GWP of 1) for determining GWP’s for other greenhouse gases. In 2004, 83.8 percent of California’s greenhouse gas emissions were carbon dioxide.⁶

Methane (CH₄). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

Nitrous oxide (N₂O). Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

³ All greenhouse gases have a GWP. This value is used to compare the abilities of different greenhouse gases to trap heat in the atmosphere. GWPs are based on the heat-absorbing ability of each gas relative to that of carbon dioxide, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years). GWPs can also be used to define the impact greenhouse gases will have on global climate change over different time periods. Assigning a GWP allows policy makers to compare impacts of emissions and reductions of different gases.

⁴ All Global Warming Potentials are given as 100 year GWP. Unless noted otherwise, all Global Warming Potentials were obtained from the Intergovernmental Panel on Climate Change. Climate Change (Intergovernmental panel on Climate Change, *Climate Change, The Science of Climate Change - Contribution of Working Group I to the Second Assessment Report of the IPCC, 1996*).

⁵ United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 to 2004*, April 2006, <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>.

⁶ California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, December 2006, http://www.energy.ca.gov/2006publications/CEC_600_2006_013_SEPDF/CEC_600_2006_013_SF.PDF.



Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.

Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi conductor manufacturing. Perfluorocarbons are potent greenhouse gases with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. The GWP of PFCs range from 5,700 to 11,900.

Sulfur hexafluoride (SF₆). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent greenhouse gas that has been evaluated by the IPCC with a GWP of 23,900. However, its global climate change contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]).⁷

In addition to the six major greenhouse gases discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone depleters; therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

- *Hydrochlorofluorocarbons (HCFCs).* HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWP of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b.⁸
- *1,1,1 trichloroethane.* 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufactures. The GWP of methyl chloroform is 110 times that of carbon dioxide.⁹
- *Chlorofluorocarbons (CFCs).* CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the EPA's Final Rule (57 FR 3374) for the phase out of ozone depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent greenhouse gases with GWP's ranging from 4,600 for CFC 11 to 14,000 for CFC 13.¹⁰

⁷ United States Environmental Protection Agency, *High GWP Gases and Climate Change*, October 19, 2006, <http://www.epa.gov/highgwp/scientific.html#sf6>.

⁸ United States Department of Energy, *Energy and Global Warming Impacts of HFC Refrigerants and Engineering Technologies*, 1997.

⁹ United States Environmental Protection Agency, *Protection of Stratospheric Ozone: Listing of Global Warming Potential for Ozone Depleting Substances*, November 7, 2006.

¹⁰ United States Environmental Protection Agency, *Class I Ozone Depleting Substances*, March 7, 2006.



- Ozone.* Ozone occurs naturally in the stratosphere where it is largely responsible for filtering harmful ultraviolet (UV) radiation. In the troposphere, ozone acts as a greenhouse gas by absorbing and re-radiating the infrared energy emitted by the Earth. As a result of the industrial revolution and rising emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) (ozone precursors), the concentrations of ozone in the troposphere have increased. Due to the short life span of ozone in the troposphere, its concentration and contribution as a greenhouse gas is not well established. However, the greenhouse effect of tropospheric ozone is considered small, as the radiative forcing of ozone is 25 percent of that of carbon dioxide.¹¹

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxins and CO are of particular concern. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The following types of people are most likely to be adversely affected by air pollution, as identified by CARB: children under 14, elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups are called sensitive receptors and include residential areas, hospitals, day-care facilities, elder-care facilities, elementary schools and parks.

Existing sensitive receptors located in the Project vicinity include single and multi-family residential homes, schools, places of worship and hospitals. Sensitive receptors can be seen below in Table 5.6-2, SENSITIVE RECEPTORS.

**TABLE 5.6-2
Sensitive Receptors**

Type	Name	Location	Distance and Direction from the Project site
School	West Redding Preschool	3490 Placer Street	0.96 mile southeast
	Manzanita Elementary School	1240 Manzanita Hills Avenue	1.00 mile southeast
Institutional	Church of Jesus Christ of Latter-Day Saints	3950 Sunflower Drive	0.10 mile southeast
	Seventh Day Adventist Church	2828 Eureka Way	0.88 mile east
	Pilgrim Congregational Church	2850 Foothill Boulevard	1.00 mile east
	First Christian Church	3590 Eureka Way	0.76 mile southeast
Hospital	Patients Hospital	2900 Eureka Way	0.76 mile east

¹¹ Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, February 2007.



TABLE 5.6-2 (Continued)
Sensitive Receptors

Type	Name	Location	Distance and Direction from the Project site
	Northern California Rehab Hospital	2801 Eureka Way	0.93 mile east
Residential	Residences	Immediately east	Adjoining
	Residences	Immediately south	0.30 mile south

Source: Google Maps, <http://www.maps.google.com>

5.6.2 REGULATORY FRAMEWORK

Regulatory oversight for air quality in the Basin rests with the Shasta County Air Quality Management District (SCAQMD) at the regional level, CARB at the State level, and the EPA Region IX office at the Federal level.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established Federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for “criteria” pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are O₃, CO, NO₂ (which is a form of nitrogen oxides [NO_x]), SO₂ (which is a form of sulfur oxides [SO_x]), PM₁₀, and PM_{2.5}, and lead (Pb); refer to Table 5.6-3, NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS.

CALIFORNIA AIR RESOURCES BOARD

The California Air Resources Board (CARB) administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 5.6-3, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan to achieve compliance with the CAAQS. The Air Quality Management Plan also serves as the basis for preparation of the State Implementation Plan for the State of California.



**TABLE 5.6-3
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California ¹		Federal ²	
		Standard ³	Attainment Status	Standards ⁴	Attainment Status
Ozone (O ³)	1 Hour	0.09 ppm (180µg/m ³)	Nonattainment	N/A ⁵	N/A ⁵
	8 Hours	0.07 ppm (370µg/m ³)	Unclassified	0.075 ppm (147µg/m ³)	Nonattainment
Particulate Matter (PM ₁₀)	24 Hours	50 µg/m ³	Nonattainment	150 µg/m ³	Nonattainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	N/A ⁷	Nonattainment
Fine Particulate Matter (PM _{2.5})	24 Hours	No Separate State Standard		35 µg/m ³	Unclassified
	Annual Arithmetic Mean	12 µg/m ³	Attainment	15 µg/m ³	Attainment
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 µg/m ³)	Attainment	9.0 ppm (10 µg/m ³)	Attainment
	1 Hour	20 ppm (23 µg/m ³)	Attainment	35 ppm (40 µg/m ³)	Attainment
Nitrogen Dioxide (NO ₂) ⁶	Annual Arithmetic Mean	0.030 ppm (56 µg/m ³)	N/A	0.053 ppm (100 µg/m ³)	Attainment
	1 Hour	0.18 ppm (338 µg/m ³)	Attainment	N/A	N/A
Lead (Pb)	30 days average	1.5 µg/m ³	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 µg/m ³	Attainment
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	N/A	N/A	0.030 ppm (80 µg/m ³)	Attainment
	24 Hours	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	3 Hours	N/A	N/A	N/A	Attainment
	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	N/A	N/A
Visibility-Reducing Particles	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient=0.23 km@<70% RH	Unclassified	No Federal Standards	



TABLE 5.6-3 (Continued)
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California ¹		Federal ²	
		Standard ³	Attainment Status	Standards ⁴	Attainment Status
Sulfates	24 Hour	25 µg/m ³	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride	24 Hour	0.01 ppm (26µg/m ³)	Unclassified		

µg/m³=micrograms per cubic meter; ppm= parts per million; km=kilometer(s); RH=relative humidity; PST=Pacific Standard Time; N/A=Not Applicable.

Notes:

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM₁₀ and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, CARB identified vinyl chloride as a toxic air contaminant, but determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.
2. National standards (other than ozone, particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. EPA also may designate an area as *attainment/unclassifiable*, if: (1) it has monitored air quality data that show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine the air quality in the area. For PM₁₀, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over the three years, are equal to or less than the standard. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. The Federal 1-hour ozone standard was revoked on June 15, 2005 in all areas except the 14 8-hour ozone nonattainment Early Action Compact (EAC) areas.
6. The Nitrogen Dioxide ambient air quality standard was amended in February 22, 2007 to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after the regulatory changes are submitted and approved by the Office of Administrative Law, expected later this year.
7. The Environmental Protection Agency revoked the annual PM₁₀ standard in 2006 (effective December 16, 2006).

Source: California Air Resources Board and U.S. Environmental Protection Agency, June 26, 2008.

Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard, and are not used as a basis for designating areas as nonattainment.

The amendments to the CCAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practicable date. These standards apply to the same criteria pollutants as the FCAA, and also include sulfate, visibility, hydrogen sulfide, and vinyl chloride; refer to Table 5.6-3.

STATE AIR TOXINS PROGRAM

Toxic air contaminants are another group of pollutants of concern in California. There are hundreds of different types of toxic air contaminants, with varying degrees of toxicity. Sources of toxic air contaminants



include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle engine exhaust. Public exposure to toxic air contaminants can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset spill conditions. Health effects of toxic air contaminants include cancer, birth defects, neurological damage and death.

California regulates toxic air contaminants through its air toxins program, mandated in Chapter 3.5 (Toxic Air Contaminants) of the Health and Safety Code (Health and Safety Code Section 39660 et seq.) and Part 6 (Air Toxins "Hot Spots" Information and Assessment) (Health and Safety Code Section 44300 et seq.). The California Air Resources Board, working in conjunction with the State Office of Environmental Health Hazard Assessment (OEHHA), identifies toxic air contaminants. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified toxic air contaminant to below a specific threshold, based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxins. The program is administered by CARB. Air quality control agencies, including the SCAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by CARB.

SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT

The proposed Project is within the Shasta County Air Quality Management District (SCAQMD), which is part of the Sacramento Valley Air Basin. The Sacramento Valley Air Basin has been further divided into two planning areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region. Shasta County is located in the NSVAB.

The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other SCAQMD responsibilities include monitoring air quality, preparation of clean air plans and responding to citizen air quality complaints. The SCAQMD participates with other air districts in the NSVAB in formulating open burning plans and attainment plans for achieving and maintaining state ambient air quality standards. Control measures and mitigation of indirect source emissions are developed with as much uniformity as possible, considering unique differences among the various rural and urban areas.

The Air Pollution Control Districts and Air Quality Management Districts (Districts) for the counties located in the northern portion of the Sacramento Valley together comprise the Northern Sacramento Valley Planning Area (NSVPA). The Districts have prepared an Air Quality Attainment Plan to achieve the State's ambient air quality standard for Ozone at the earliest possible date. The *2006 Air Quality Attainment Plan for the Northern Sacramento Valley Planning Area (2006 Air Quality Attainment Plan)* relies on a multi-level partnership of governmental agencies at the Federal, State, regional, and local level. The *2006 Air Quality Attainment Plan* proposes policies and measures to achieve federal and state standards for improved air quality in the Basin.

The *2006 Air Quality Attainment Plan* also addresses several state and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, public education programs, transport of pollutants, and control measures. The *2006 Air Quality Attainment Plan* addresses the progress made by the *2003 Air Quality Attainment Plan* and proposes modifications in order to reach the California ambient air quality standard for 1-hour ozone levels.



CITY OF REDDING

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects on air quality. Goals relative to the proposed Project site within these elements are listed in Table 5.6-4, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR AIR QUALITY, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.

GLOBAL CLIMATE CHANGE REGULATORY PROGRAMS

Assembly Bill 32

The Legislature enacted AB 32 (AB 32, Nunez), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006 to further the goals of Executive Order S-3-05. AB 32 represents the first enforceable statewide program to limit greenhouse gas emissions from all major industries with penalties for noncompliance. CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. The foremost objective of CARB is to adopt regulations that require the reporting and verification of statewide greenhouse gas emissions. This program will be used to monitor and enforce compliance with the established standards. The first greenhouse gas emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost effective greenhouse gas emission reductions. AB 32 allows CARB to adopt market based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring, compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market based compliance mechanism adopted. In order to advise CARB, it must convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee. The California Air Resources Board has approved a 2020 emissions limit of 427 metric tons of CO₂ equivalent.

Executive Order S-20-04

Governor Schwarzenegger signed Executive Order S-20-04 (The California Green Building Initiative) establishing the State's priority for energy and resource-efficient high performance buildings on December 14, 2004. The Executive Order sets a goal of reducing energy use in state-owned and private commercial buildings by 20 percent in 2015 using non-residential Title 20 and 24 standards adopted in 2003 as the baseline. The California Green Building Initiative also encourages private commercial buildings to be retrofitted, constructed, and operated in compliance with the State's Green Building Action Plan.



TABLE 5.6-4
Consistency Analysis with City of Redding General Plan
Goals and Policies for Air Quality

General Plan Goals, Policies, and Objectives	Analysis
<u>Air Quality Element</u>	
Goal 1: Effective communication, cooperation and coordination in development and implementing community and regional air quality plans.	
Policy 1: The City will require an air quality impact analysis using the recommended methods promulgated by the Air Quality Management District (AQMD) for all projects that are subject to CEQA review and which exceed emissions thresholds established by the AQMD.	This section analyzes the air quality impacts of the proposed Project and presents mitigation measures to reduce any impacts; refer to Section 5.6.4.
Policy 2: The City Department of Planning and Community Development will submit a report to the Planning Commission for approval which identifies the cumulative transportation and air quality impacts of all General Plan Amendments approved during the previous year in the Annual General Plan Status Report.	The proposed Project is consistent with the City's General Plan and zoning designations. Additionally, the Project would be consistent with the SCAQMD's 2006 Air Quality Attainment Plan.
Goal 2: Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership (AVR).	
Policy 17: The City shall make air quality and mobility prime considerations when reviewing any proposed change to the land-use pattern. Such consideration shall include, as much as possible, increased transit and pedestrian mobility.	The proposed Project is designed to allow residents to utilize bike paths, public transportation, and/or walk to places within the City.
Goal 3: Reduce particulate matter emissions from sources under the jurisdiction of the City.	
Policy 29: The City will require measures to reduce particulate emissions from construction, grading, and demolition to the maximum extent feasible.	Refer to MM 5.6-1a through MM 5.6-1c. All Standard Mitigation Measures and feasible Best Available Mitigation Measures (BAMMs) would be required.
Goal 4: Minimize air pollutant emissions from wood burning fireplaces and appliances.	
Policy 31: The City will only allow developers to install low-emitting, Environmental Protection Agency (EPA) certified Phase 2 or more stringent fireplace inserts and/or wood stoves or pellet stoves.	The proposed Project would be required to install only EPA certified fireplaces and/or wood stoves.
Source: City of Redding General Plan, October 2000.	



Executive Order S-3-05

In June 2005, Governor Schwarzenegger established California's greenhouse gas emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: Greenhouse gas emissions should be reduced to 2000 levels by 2010; greenhouse gas emissions should be reduced to 1990 levels by 2020; and greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050. The Secretary of the California Environmental Protection Agency (the Secretary) is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Some of the agencies involved in the greenhouse gas reduction plan include Secretary of Business, Transportation and Housing Agency, Secretary of Department of Food and Agriculture, Secretary of Resources Agency, Chairperson of California Air Resources Board, Chairperson of the Energy Commission, and the President of the Public Utilities Commission. The Secretary is required to submit a biannual progress report to the Governor and State Legislature disclosing the progress made toward greenhouse gas emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global climate change on California's water supply, public health, agriculture, the coastline and forestry and report possible mitigation and adaptation plans to combat these impacts.

Executive Order S-1-07

On January 18, 2007, California further solidified its dedication to reducing greenhouse gases by setting a new Low Carbon Fuel Standard for transportation fuels sold within the State. Executive Order S-1-07 sets a declining standard for greenhouse gas emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The Low Carbon Fuel Standard applies to refiners, blenders, producers and importers of transportation fuels and will use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods. The Executive Order requires the Secretary of the California Environmental Protection Agency to coordinate with actions of the California Energy Commission, CARB, the University of California and other agencies to develop a protocol to measure the "life cycle carbon intensity" of transportation fuels. In response to this Executive Order, CARB identified the Low Carbon Fuel Standard as an early action item with a regulation to be adopted and implemented by 2010.

Senate Bill 97

Senate Bill 97 of 2007 requires the California Office of Planning and Research (OPR) to develop CEQA guidelines, identify the effects of greenhouse gas emissions and mitigation measures to the Resources Agency by July 1, 2009. These guidelines for analysis and mitigation must address, but are not limited to, greenhouse gas emissions effects associated with transportation or energy consumption. Following receipt of these guidelines, the Resources Agency must certify and adopt the guidelines prepared by OPR by January 1, 2010. In his signing statement, governor Arnold Schwarzenegger noted:

"Current uncertainty as to what type of analysis of greenhouse gas emissions is required under the California Environmental Quality Act (CEQA) has led to legal claims being asserted which would stop these important infrastructure projects. Litigation under CEQA is not the best approach to reduce greenhouse gas emissions and maintain a sound and vibrant economy. To achieve these goals, we need a coordinated policy, not a piecemeal approach dictated by litigation."



The OPR has begun the process of formulating the guidelines called for in Senate Bill 97. Part of that effort included a survey of existing climate change analyses performed by various lead agencies under CEQA. OPR's effort revealed many questions surrounding such analyses, including, among others, what is a "new" greenhouse gas emission, what is the appropriate baseline for a climate change analysis, and when would emissions become significant under CEQA.

Senate Bill 375

Senate Bill 375 (SB 375) would require metropolitan planning organizations to include sustainable communities' strategies in their regional transportation plans. The purpose of SB 375 would be to reduce greenhouse gas emission reduction targets from the automobiles and light trucks, require CARB to provide greenhouse gas emission reduction targets from the automobile and light truck sector for 2020 and 2035 by January 1, 2010 and update the regional targets until 2050. SB 375 would require certain transportation planning and programming activities to be consistent with sustainable communities strategies contained in the regional transportation plan. The bill would also require affected regional agencies to prepare an alternative planning strategy to the sustainable communities' strategies if the sustainable communities' strategy is unable to achieve the greenhouse gas emission reduction targets. SB 375 was approved by the California State Assembly and the California Senate in August 2008.

5.6.3 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Appendix G of the State *CEQA Guidelines* contains analysis guidelines related to the assessment of air quality impacts. These guidelines have been utilized as thresholds of significance for this analysis. As stated in Appendix G, a Project may create a significant environmental impact if one or more of the following occurs:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or Projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Create objectionable odors affecting a substantial number of people.

SCAQMD CEQA THRESHOLDS

On November 25, 2003, the SCAQMD adopted its CEQA guidelines consistent with the CEQA statute. These guidelines state, "the SCAQMD may use any available assessment method including, but not limited to, emission thresholds cited in District Rules or General Plan Air Quality Elements for determining significant impact." The City of Redding has adopted an Air Quality Element of its *General Plan*. This



document provides thresholds of significance for evaluating the impacts of development projects subject to discretionary approvals by the City.

The SCAQMD has established quantitative vehicle emissions thresholds for projects, which when exceeded trigger a requirement for further air quality analysis and mitigation. Two types of thresholds are established: "Level A" and "Level B", with "Level A" being the lower level. Projects whose emissions do not exceed "Level A" thresholds are required to implement a set of Standard Mitigation Measures (SMMs) developed by the SCAQMD that are designed to reduce total emissions generated by a project. The "Level A" emissions thresholds are as follows:

- 25 pounds per day of NO_x.
- 25 pounds per day of ROG.
- 80 pounds per day of PM₁₀.

Project emissions that meet or exceed "Level A" emission thresholds are required to implement SMMs and feasible Best Available Mitigation Measures (BAMMs) developed by the SCAQMD that are applicable to the project. "Level B" emission thresholds are:

- 137 pounds per day of NO_x.
- 137 pounds per day of ROG.
- 137 pounds per day of PM₁₀.

Projects whose emissions exceed the "Level B" thresholds must implement SMMs, feasible BAMMs and provide emission offsets for emissions above 137 pounds per day.

5.6.4 IMPACTS

Air quality impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT-TERM IMPACTS (CONSTRUCTION)

5.6-1 TEMPORARY CONSTRUCTION-RELATED DUST AND VEHICLE EMISSIONS WOULD OCCUR DURING CONSTRUCTION WITHIN THE PROJECT AREA.

Impact Analysis: Short-term air quality impacts are predicted to occur during grading and construction operations associated with implementation of the proposed Project. The short-term air quality analysis considers cumulative construction emissions of the activities associated with each improvement within the Project area. The Project would be constructed in eight separate phases over an eight year period. Each of the eight phases would be constructed over an approximate eight month period. The analysis reviewed all activities associated with construction of the proposed Project, including off-site water and sewer extensions, tie-in roads to Eureka Way (SR-299) and Buenaventura Boulevard, and other intersection improvements. Temporary air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from the proposed demolition/clearing, grading, and building construction; and
- Exhaust emission from the construction equipment and the motor vehicles of the construction crew.



Odors generated during construction activities would be temporary and are not considered to be a significant impact. Emissions produced during grading and construction activities are short-term, as they would exist only during construction. Table 5.6-5, CONSTRUCTION AIR EMISSIONS, indicates the anticipated short-term emissions associated with construction activities. The SCAQMD only has thresholds for PM₁₀ and Federal and State O₃ (ROG and NO_x are O₃ precursors).

Fugitive Dust Emissions

Short-term impacts from the Project would result in fugitive particulate matter emissions through grading, excavation, trenching, filling, and other construction activities. The City's Air Quality Element identifies dust control BAMMs for outdoor sources of fugitive particulate matter emissions (which require watering of inactive and perimeter areas, street sweeping, etc.).

Construction activities are a source of fugitive dust (PM₁₀) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from demolition, grading, and construction is expected to be short-term and would cease upon Project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

According to the modeling results in Table 5.6-5, the highest amount of mitigated PM₁₀ emissions would be 10.50 pounds per day (lbs/day) in 2011 (Phase 1). This is below the SCAQMD Level B thresholds of significance; refer to Appendix 15.5, AIR QUALITY DATA, for detailed air quality modeling outputs and assumptions. As a result, with implementation of MM 5.6-1a and applicable SCAQMD Regulations, fugitive dust emissions would be less than significant.

Reactive Organic Gas Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are ozone precursors. The ROG emissions associated with paving and architectural coating activities have been quantified with the URBEMIS 2007 model. As shown in Table 5.6-5, the maximum ROG emissions would occur in 2011 during the construction of Phase 1 (97.72 lbs/day), and are below the SCAQMD threshold of 137 lbs/day. In addition, all architectural coatings for the proposed Project structures would be required to adhere to specifications on painting practices as well as regulating the ROG content within paint as specified in SCAQMD Rule 3:31 (Architectural Coatings). Therefore, impacts from ROG emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Emitted pollutants would include ROG, NO_x, and PM₁₀. Standard SCAQMD regulations such as maintaining all construction equipment in proper tune, shutting down equipment when not in use for extended periods of time would be adhered to. As noted within Table 5.6-5, construction equipment exhaust would not cause an exceedance of the SCAQMD's NO_x thresholds during the construction period. Impacts would be less than significant.



**TABLE 5.6-5
 Construction Air Emissions**

Emissions Source ¹	Pollutant (pounds/day) ²		
	ROG	NO _x	PM ₁₀
Phase 1, Year 2011			
Unmitigated Emissions	108.13	23.54	134.98
Mitigated Emissions ³	97.72	23.54	10.50
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 2, Year 2012			
Unmitigated Emissions	87.03	22.04	134.88
Mitigated Emissions ³	78.70	22.04	10.40
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 3, Year 2013			
Unmitigated Emissions	39.18	20.65	134.79
Mitigated Emissions ³	35.39	20.65	10.32
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 4, Year 2014			
Unmitigated Emissions	101.19	19.16	134.69
Mitigated Emissions ³	91.38	19.16	10.22
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 5, Year 2015			
Unmitigated Emissions	96.90	17.58	134.62
Mitigated Emissions ³	87.49	17.58	10.14
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 6, Year 2016			
Unmitigated Emissions	70.01	16.13	134.56
Mitigated Emissions ³	63.72	16.13	10.08
SCAQMD Threshold	137	137	137



**TABLE 5.6-5 (Continued)
 Construction Air Emissions**

Emissions Source ¹	Pollutant (pounds/day) ²		
	ROG	NO _x	PM ₁₀
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 7, Year 2017			
Unmitigated Emissions	34.85	14.75	134.48
Mitigated Emissions ³	34.58	14.75	10.01
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No
Phase 8, Year 2018			
Unmitigated Emissions	97.36	18.33	134.41
Mitigated Emissions ³	87.84	18.33	9.93
SCAQMD Threshold	137	137	137
Is Threshold Exceeded After Mitigation?	No	No	No

Notes:

- 1 - Development of the Project is based upon construction phasing as described in the Section 3.0, PROJECT DESCRIPTION.
- 2 - Emissions calculated using the URBEMIS 2007 Version 9.2.4 Computer Model.
- 3 - The reduction/credits for construction emission mitigations are based on mitigation included in the URBEMIS 2007 Version 9.2.4 Computer Model and as typically required by the Shasta County Air Quality Management District BMMs. The mitigation includes the following: replace ground cover on disturbed areas quickly, water exposed surfaces twice daily, apply soil stabilizers to inactive areas, proper loading/unloading of mobile and other construction equipment, and use low VOC coatings.

Refer to Appendix 15.5, AIR QUALITY DATA, for assumptions used in this analysis, including quantified emissions reduction by mitigation measures.

Naturally Occurring Asbestos

Pursuant to guidance issued by the Governor’s Office of Planning and Research, State Clearinghouse, Lead Agencies are encouraged to analyze potential impacts related to naturally occurring asbestos. Naturally occurring asbestos can be released from serpentine and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations.

Serpentine and/or ultramafic rock are known to be present in 44 of California’s 58 counties. These rocks are particularly abundant in the counties of the Sierra Nevada foothills, the Klamath Mountains and Coast Ranges. According to the Geologic Map of California - Redding Sheet (1969, United States Geological Survey), the proposed Project is not located in an area where naturally occurring asbestos is likely to be present. The Project site is mostly underlain by Pleistocene Nonmarine, Devonian and pre-Devonian metavolcanic rocks, and Devonian Marine rock formations. Therefore, impacts would be considered less



than significant. As the potential for Naturally Occurring Asbestos is not anticipated, a less than significant impact would occur in this regard.

Mitigation Measures:

MM 5.6-1a The proposed developer and all successors in interest shall include in all construction contracts the requirement that the following construction dust mitigation measures be implemented during all phases of construction:

- Apply nontoxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for ten days or more).
- Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
- All grading operations of a project shall be suspended when wind (as instantaneous gusts) exceeds 20 miles per hour as directed by the Air Quality Management District.
- Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person).
- Schedule construction activities that affect traffic flow to off-peak hours.
- Water active construction sites at least twice daily.
- All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. (This provision is also enforced by local law enforcement agencies).
- Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads only paved roads, or wash off trucks and any equipment leaving the site each trip.
- Cleared vegetation shall be treated by legal means other than open burning, such as chipping, shredding, or grinding.

MM 5.6-1b The Project Applicant shall provide a plan for approval by the Shasta County Air Quality Management District and the City demonstrating that heavy-duty (>50 horsepower) off-road construction vehicles, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average reduction of 20 percent for NO_x and a 45 percent reduction of particulates compared to the most recent California Air Resources Board fleet average at time of construction.

MM 5.6-1c The proposed developer and all successors in interest shall include in all construction contracts the requirement that the following temporary construction mitigation measures be implemented during all phases of construction:



- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Equipment operators will be instructed to minimize equipment idling time to 10 minutes.
- Utilize existing power sources (e.g., power poles) to clean fuel generators rather than temporary power generators wherever possible.

Level of Significance: Less than significant impact with mitigation incorporated.

LONG-TERM IMPACTS (OPERATIONAL)

5.6-2 ***THE PROPOSED PROJECT WOULD RESULT IN AN OVERALL INCREASE IN THE LOCAL AND REGIONAL POLLUTANT LOAD DUE TO DIRECT IMPACTS FROM VEHICLE EMISSIONS AND INDIRECT IMPACTS FROM ELECTRICITY AND NATURAL GAS CONSUMPTION.***

Impact Analysis: Operational emissions would be generated by both stationary and mobile sources due to normal day-to-day activities occurring on the Project site after occupation. Stationary source emissions are those generated by the consumption of natural gas for space and water heaters, landscape maintenance equipment, and consumer products. Mobile emissions are those generated by the motor vehicles traveling to and from the Project site.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, and PM₁₀ are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport PM₁₀). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

As previously discussed, the Basin is a non-attainment area for State air quality standards for O₃ and PM₁₀. NO_x and ROG are regulated O₃ precursors. A precursor is defined as a directly emitted air contaminant that, when released into the atmosphere forms a secondary air contaminant for which an ambient air quality standard has been adopted. Project-generated vehicle emissions have been quantified using the URBEMIS 2007. This model predicts emissions of criteria pollutants from motor vehicle traffic associated with new or modified land uses; refer to Appendix 15.5, AIR QUALITY DATA, for model input values and assumptions.

Project trip generation rates were obtained from the Project *Traffic Impact Analysis Report*; refer to Section 5.4, TRAFFIC AND CIRCULATION, and Appendix 15.3, TRAFFIC IMPACT ANALYSIS. Table 5.6-6, LONG-TERM OPERATIONAL AIR EMISSIONS, presents the anticipated area and mobile source emissions. As shown in Table 5.6-6, emissions generated by vehicle traffic associated with the proposed Project would not exceed established SCAQMD thresholds.



**TABLE 5.6-6
 Long-Term Operational Air Emissions**

Emissions Source	Pollutant (pounds/day) ¹		
	ROG	NO _x	PM ₁₀
Area Source Emissions ²	30.48	5.24	0.06
Mobile Emissions	35.95	35.24	68.82
Total Emissions	66.43	40.48	68.88
SCAQMD Threshold	137	137	137
Is threshold Exceeded? (Significant Impact)?	No	No	No

Notes:

- 1 - Based on URBEMIS 2007 Version 9.2.4 modeling results, worst-case seasonal emissions for area and mobile emissions have been modeled.
- 2 - Area Source excludes the use of fireplaces and wood burning stoves.

Area Source Emissions

Area source emissions would be generated due to an increased demand for electrical energy and natural gas with the development of the proposed improvement. This assumption is based on the supposition that those power plants supplying electricity to the site are utilizing fossil fuels. Electric power generating plants are distributed throughout the Basin and western United States, and their emissions contribute to the total regional pollutant burden. The primary use of natural gas by the proposed land uses would be for combustion to produce space heating, water heating, other miscellaneous heating, or air conditioning, consumer products, and landscaping. As shown on Table 5.6-6, area source emissions from the proposed Project would not exceed SCAQMD thresholds for ROG, NO_x, and PM₁₀.

Total Operational Emissions

The total Project operational emissions are described in terms of area source and mobile source (vehicle) emissions. A substantial portion of air quality impacts are attributable to Project-related traffic. The SCAQMD recommends that all projects employ appropriate Standard Mitigation Measures (SMMs) at a minimum. In addition, emissions sources that are over the "Level A" thresholds are required to implement Best Available Mitigation Measures (BAMMs). As shown in Table 5.6-6, operational emissions would not exceed the "Level B" thresholds but exceed the "Level A" thresholds of 25 pounds per day for NO_x and ROG and 80 pounds per day for PM₁₀. Therefore, the Project Applicant is required to implement the Standard Mitigation Measures (SMM) and "Level A" BAMMs identified in the Air Quality Element of the *General Plan*. Operational air emissions would be less than significant.

The proposed Project represents the implementation of an efficient land use scheme that includes a variety of housing types as provided for within the City's *General Plan*. Although it has been determined that the proposed Project emissions do not trigger "Level B" BAMMs, the proposed subdivision design incorporates several recommended "Level B" BMM strategies as noted below:



Select "Level B" Best Available Mitigation Measures Incorporated into the Subdivision Design:

- Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes in accordance with an adopted citywide or countywide plan: *The proposed Project proposes to complete the connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension to encourage use.*
- Synchronize traffic signals along streets impacted by development: *As noted in Section, 5.4, TRAFFIC AND CIRCULATION, the proposed Project would construct traffic flow improvements to mitigate several existing deficiencies.*
- Construct on-site and off-site bus turnouts, passenger benches, and shelters: *As noted in Section, 5.4, TRAFFIC AND CIRCULATION, the proposed Project would not interfere with existing transit service or transit stops and would potentially generate transit ridership. Expansion of Route 2 services would be considered as the Project is built out and the demand for services is warranted. However, street design within the Project would accommodate bus turnouts at strategic locations as determined through final plan review.*
- Provide for pedestrian access between bus service and major points within the development: *The proposed Project would contain 32 to 40-foot wide two way street sections which would not prohibit bicycle use on these interior roadways. The proposed Project would provide five-foot separated sidewalks with 6.5-foot landscaping buffers to the back of curb, on all interior streets.*
- Construct off-site pedestrian facility improvements such as overpasses and wider sidewalks: *The proposed Project would construct a 10-foot sidewalk along the open-space side of Buenaventura Boulevard extension. It should also be noted that the proposed Project is located in close proximity to RABA's Route 2 which passes through the intersection of Eureka Way (SR-299) and Buenaventura Boulevard.*
- Orient building structures and install landscape that takes advantage of passive solar design principles: *Fifty percent of the subdivision will be enrolled in Redding Electric Utility's (REU) Earth Advantage Program. This program is designed to offer builders and developers multiple options on building techniques to meet program standards and criteria. A principle component of this program is to increase energy efficiency by 20 percent over California Title 24.*
- Install solar water heaters for at least 25 percent of the residential units in the development: *As previously stated, 50 percent of the subdivision will be enrolled in REU's Earth Advantage Program.*
- Provide neighborhood park(s) or other recreational options such as trails within development to minimize vehicle travel to other parks or commercial areas: *The proposed Project includes a 13.9 acre neighborhood park. Public transportation as well as bike lanes/trails would provide access to nearby commercial uses that would be considered a smart land use and intelligent transportation system. Streets internal to the subdivision will be detached and landscaped to promote walkability.*

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. Typically, odorant compounds irritate the eyes, nose and throat, which can reduce respiratory volume. Secondly, the



VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

Land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses associated with odors. Thus, impacts related to odors would be less than significant.

Mitigation Measures: No mitigation measures are required beyond implementation of the Standard Mitigation Measures (SMMs) and "Level A" BAMMs identified in the Air Quality Element of the *General Plan*.

Level of Significance: Less than significant impact.

CARBON MONOXIDE HOT SPOTS IMPACTS

5.6-3 CARBON MONOXIDE HOT SPOTS WOULD NOT OCCUR AS A RESULT OF THE PROPOSED PROJECT.

Impact Analysis: Carbon monoxide emissions are a function of vehicle idling time, meteorological conditions and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway, or intersection may reach unhealthy levels (i.e., adversely affect residents, school children, hospital patients, the elderly, etc.). An intersection operating at a Level of Service (LOS) D or worse has the potential to result in a CO hotspot. Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, these hot spots are typically produced at intersections. Table 5.6-7, PROJECT BUILDOUT CARBON MONOXIDE CONCENTRATIONS, provides the list of intersections within the Project area that required a CO hotspot analysis.

The projected traffic volumes were then modeled using the BREEZE ROADS dispersion model. The resultant values were then added to an ambient concentration. A receptor height of 1.8 meters was used in accordance with the EPA's recommendations. The calculations assume a meteorological condition of almost no wind (0.5 m/s), a flat topological condition between the source and the receptor and a mixing height of 1,000 meters. A standard deviation of five degrees was used for the deviation of wind direction. The suburban land classification was used for the aerodynamic roughness coefficient. This follows the BREEZE ROADS user's manual definition of suburban as, "regular coverage with large obstacles, open spaces roughly equal to obstacle heights, villages, mature forests."

For the purposes of this analysis, the ambient concentration used in the modeling was the highest one-hour measurement from 2007 of SCAQMD monitoring data at the Chico-Manzanita Monitoring Station. Actual future ambient CO levels may be lower due to emissions control strategies that would be implemented between now and the Project buildout date.

The intersections in the study currently operate at a LOS ranging from LOS A to LOS D for PM peak hour activities. At Project buildout, the intersections would operate at a LOS D or worse in an unmitigated condition. As indicated in Table 5.6-7, CO concentrations would be well below the State and Federal standards. The modeling results are compared to the California Ambient Air Quality Standards for carbon



monoxide of 9 ppm on an 8-hour average and 20 ppm on a 1-hour average. Neither the 1-hour average nor the 8-hour average would be equaled or exceeded. Impacts in regards to CO hot spots would be less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

**TABLE 5.6-7
 Project Buildout Carbon Monoxide Concentrations**

Intersection	1-Hour CO (ppm) ¹		8-Hour CO (ppm) ¹	
	1-Hour Standard	Future + Project	8-Hour Standard	Future + Project
Eureka Way and Lower Springs Road	20 ppm	3.6	9 ppm	2.52
Eureka Way and Buenaventura Boulevard	20 ppm	3.9	9 ppm	2.73
Eureka Way and Sunset Drive	20 ppm	3.9	9 ppm	2.73
Eureka Way and Overhill Drive	20 ppm	3.8	9 ppm	2.66
Eureka Way and Almond Avenue	20 ppm	3.8	9 ppm	2.66
Eureka Way and Magnolia Avenue	20 ppm	3.8	9 ppm	2.66
Eureka Way and 11 th Street	20 ppm	3.9	9 ppm	2.73
Eureka Way and West Street	20 ppm	3.8	9 ppm	2.66
Eureka Way and Court Street	20 ppm	4.0	9 ppm	2.80
Court Street and 11 th Street	20 ppm	3.7	9 ppm	2.59
Eureka Way and Market Street	20 ppm	4.0	9 ppm	2.80
Shasta Street and Court Street	20 ppm	3.9	9 ppm	2.73
Shasta Street and Market Street	20 ppm	3.9	9 ppm	2.73
Placer Street and Court Street	20 ppm	3.9	9 ppm	2.73
Placer Street and Airpark Drive/Fig Avenue	20 ppm	3.8	9 ppm	2.66
Placer Street and Buenaventura Boulevard	20 ppm	3.9	9 ppm	2.73
Buenaventura Boulevard and Lakeside Drive	20 ppm	3.7	9 ppm	2.59
Eureka Way and Project Driveway	20 ppm	3.6	9 ppm	2.52

1. As measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1 hour CO concentrations include a background concentration of 3.4 ppm. Eight-hour concentrations are based on a persistence of 0.7 of the 1-hour concentration.



AIR QUALITY CONFORMITY ANALYSIS

5.6-4 THE PROPOSED PROJECT WOULD BE CONSISTENT WITH THE AIR QUALITY ATTAINMENT PLAN (AQAP) CRITERIA.

Impact Analysis: Air quality conformity refers to the process whereby transportation plans, program, and projects conform to the requirements of the 1990 Federal Clean Air Act Amendments (CAAA) and the applicable State Implementation Plan. The CAAA placed new requirements on sources and causes of air pollution in areas failing to meet federal air quality standards, including the Basin. The CAAA requires substantial reductions from all pollution sources, including pollutants from the transportation sector. The CAAA included more stringent requirements for demonstrating that transportation plans and projects contribute to improvements in air quality contained in the conformity provisions in Section 176(a).

The proposed Project is consistent with the *General Plan* and is located in an area designated for community development. Overall, Project implementation would not conflict with the land use plan, goals, and strategies of the *General Plan*. The proposed Project requests to add the "PD" (Planned Development Overlay District) to the existing "RS-2" (Residential Single Family), "RM-9" (Residential Multiple Family), "GO" (General Office), and "OS" (Open Space). The "PD" (Planned Development Overlay District) would allow the Project to have the proposed variety of housing types, blending of *General Plan* densities, and flexibility in application of the City's zoning regulations. Development within the "PD" (Planned Development Overlay District) would be consistent with any adopted area plans, density provisions of the *General Plan* land use designation and base zoning district, and must be compatible with surrounding land uses. In addition, the proposed Project is required to comply with the City of Redding *Zoning Ordinance*, which is designed to ensure land use compatibility and orderly development.

The SCAQMD requires all projects to strive to reduce emissions by 20 percent by applying applicable Standard Mitigation Measures (SMMs). This standard addresses the need to mitigate the cumulative impacts of individual projects. As noted above, the Project Applicant is required to implement the SMMs and "Level A" BAMMs identified in the Air Quality Element of the *General Plan*. Although it has been determined that the proposed Project emissions do not trigger "Level B" BAMMs, the proposed subdivision design incorporates several recommended "Level B" Bamm strategies as previously noted above. Fifty percent of the subdivision will also be enrolled in REU's Earth Advantage Program which is designed to increase energy efficiency by 20 percent over California Title 24. Operational air emissions would be less than significant.

Significance thresholds have been developed by the SCAQMD for criteria pollutants to assist in implementing attainment plans for the area. Assessment of air quality impacts of the Project in relation to these significance thresholds determines whether or not the Project is consistent with applicable air quality management plans including the *2006 Air Quality Attainment Plan*. Impacts relative to SCAQMD thresholds are identified under the Short-Term (Construction) and Long-Term (Operational) Impact Analyses (refer to Impact statements 5.6-1 and 5.6-2, respectively). Based on the above analysis, the proposed Project would not exceed SCAQMD thresholds for both construction and operational activities and would therefore not conflict with the applicable air quality management plans.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



CUMULATIVE IMPACTS

5.6-5 IMPACTS ON REGIONAL AIR QUALITY RESULTING FROM THE PROPOSED PROJECT AND CUMULATIVE PROJECTS MAY IMPACT EXISTING REGIONAL AIR QUALITY LEVELS ON A CUMULATIVE BASIS.

Impact Analysis: The City of Redding and the surrounding area as a whole must be considered for the purpose of evaluating air quality issues on a cumulative level. In particular, the cumulative setting for air quality includes existing, approved, proposed, and reasonably foreseeable development in the SCAQMD. A list of recently approved and proposed projects can be found in Section 4.0, BASIS OF CUMULATIVE ANALYSIS. The City of Redding is classified as a nonattainment area for State O₃ and PM₁₀ standards.

In order to improve air quality and attain the health-based standards, reductions in emissions are necessary within the nonattainment area. The Project would result in additional vehicular travel to and from the Project site, with the resultant exhaust emissions that contain ozone precursors and particulate matter. Construction impacts, coupled with existing conditions, could create cumulative impacts from particulate matter generation. The growth in population, vehicle usage, and business activity within the region, to which the Project would cumulatively contribute, would either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to off-set Project-related emission increases.

The proposed Project and related cumulative projects would comply with SCAQMD rules and requirements, and implement all feasible mitigation measures. Adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions. According to Table 5.6-5 and Table 5.6-6, the proposed Project would not exceed the SCAQMD thresholds of significance for regional criteria pollutants. Additionally, implementation of the MM 5.6-1a through MM 5.6-1c would reduce potential short-term impacts from construction and implementation of SMMs and "Level A" BAMMs in accordance with the Air Quality Element of the *General Plan*, long-term operational impacts would be reduced. Therefore, cumulative impacts associated with the proposed construction and operation of the Project would be less than significant.

Global Climate Change Discussion

California is a substantial contributor of global greenhouse gases, emitting over 400 million tons of carbon dioxide (CO₂) a year¹². Climate studies indicate that California is likely to see an increase of three to four degrees Fahrenheit over the next century. Methane is also an important greenhouse gas that potentially contributes to global climate change. Greenhouse gases are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;

¹² California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004, 2006*.



- Natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of greenhouse gases and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The impact of anthropogenic activities on global climate change is readily apparent in the observational record. For example, surface temperature data shows that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.¹³ In addition, the atmospheric water vapor content has increased since at least the 1980s over land, sea and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet; and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, polar ice and ice sheets in both the Arctic and Antarctic regions.

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of carbon dioxide, methane and nitrous oxide from before the start of the industrialization, around 1750 to over 650,000 years ago. For that period, it was found that carbon dioxide concentrations ranged from 180 ppm to 300 ppm. For the period from around 1750 to the present, global carbon dioxide concentrations increased from a pre industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre industrial period range.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2° Celsius per decade, determined from meteorological measurements world wide between 1990 and 2005.¹⁴ Climate change modeling using 2000 emission rates shows that further warming would occur, which would include further changes in the global climate system during the current century.¹⁵ Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snow pack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;¹⁶
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets;¹⁷
- Changes in weather that includes, widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic and aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;¹⁸
- Decline of Sierra snow pack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;¹⁹

¹³ Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, February 2007.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March, 2006.



- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;²⁰ and
- High potential for erosion of California's coastlines and sea water intrusion into the Delta and levee systems due to the rise in sea level.²¹

While there is broad agreement on the causative role of greenhouse gases to climate change, there is considerably less information or consensus on how climate change would affect any particular location, operation, or activity. The International Panel for Climate Change (IPCC) is a group established by the World Meteorological Organization and United Nations Environment Programme in 1988. The role of the IPCC is to assess on a comprehensive, objective, open, and transparent basis the scientific, technical, and socioeconomic information relative to understanding the scientific basis of risk from human induced climate change, its potential impacts and options for adaptation and mitigation. The IPCC has published numerous reports on potential impacts of climate change to the human environment. These reports provide a comprehensive and up-to-date assessment of the current state of knowledge on climate change. Despite the extensive peer review of reports and literature on the impacts of global climate change, the IPCC notes the fact that there is little consensus as to the ultimate impact of human interference with the climate system and its causal connection to global warming trends.

Threshold of Significance for Climate Change

The IPCC constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases at 400 to 450 ppm carbon dioxide-equivalent concentration is required to keep global mean warming below 2°C, which in turn is assumed to be necessary to avoid dangerous climate change.

California Governor Arnold Schwarzenegger issued Executive Order S-3-05 in June 2005, which established the following greenhouse gas emission reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels; and
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

Assembly Bill 32 requires that CARB determine what the statewide greenhouse gas emissions level was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. CARB has approved a 2020 emissions limit of 427 metric tons of CO₂ equivalent.

Due to the nature of global climate change, it is not anticipated that any single development project would have a substantial effect on global climate change. It is difficult to deem a single development as individually responsible for a global temperature increase. In actuality, greenhouse gas emissions from the proposed Project would combine with emissions emitted across California, the United States, and the world to cumulatively contribute to global climate change.

²⁰ Ibid.

²¹ Ibid.



As part of the CEQA scoping process, the SCAQMD issued a letter that indicated a threshold of zero or near zero would be appropriate for the proposed Project.²² However, per State *CEQA Guidelines* §15064.7(a), "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." Additionally, per §15064(b) of the State *CEQA Guidelines*, the final determination of whether an impact is significant is dependent upon the purview of the lead agency. CEQA requires public agencies (i.e., local, county, regional, and state government) to consider and disclose the environmental effects of their decisions to the public and governmental decision-makers. Further, it mandates that agencies implement feasible mitigation measures or alternatives that would mitigate significant adverse effects to the environment. Finally, CEQA provides a mechanism for disclosing to the public the reasons why a governmental agency approved a project if significant environmental effects are involved. For the purposes of the proposed Project, the SCAQMD will act as the commenting agency and the City of Redding as the Lead Agency.

The California Air Resources Board (CARB) has recommended the use of 10,000 metric tons of carbon dioxide equivalent per year (mtCO₂eq/yr) as the "de minimus greenhouse gas emission threshold" in their *Climate Change Proposed Scoping Plan*, which was approved by CARB's Board on January 11, 2009. This threshold is being considered by the California Market Advisory Committee, whose mandate under the California Environmental Protection Agency is to develop market-based compliance mechanisms for reducing greenhouse gases.

In addition, according to California Air Pollution Control Officers Association's (CAPCOA) *Threshold 2.3, CARB Reporting Threshold*, 10,000 mtCO₂eq/yr is also recommended as a quantitative non-zero threshold. It should also be noted that According to the CAPCOA White Paper; this threshold would be equivalent to 550 dwelling units, 400,000 square feet of office use, 120,000 square feet of retail, or 70,000 square feet of supermarket use. This approach is estimated to capture over half of the future residential and commercial development projects, and is designed to ensure the goals of Assembly Bill 32 are not hindered.

Direct Project-Related Sources of Greenhouse Gases

Table 5.6-8, ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS PROJECTIONS, presents the nitrous oxide (N₂O) and methane (CH₄) emissions as well as their CO₂ equivalent values for the construction and operational phases of the proposed Project. Total construction and operational greenhouse gas emissions were separately evaluated under the 10,000 mtCO₂eq/yr, as the construction emissions would cease upon completion of the activities. It should be noted that the CAPCOA methodology does not require construction related greenhouse gases to be evaluated against the recommended significance threshold.

Although the proposed Project falls below the CAPCOA recommended threshold, it has incorporated many design features that are consistent with the California Office of the Attorney General's recommended measures to reduce greenhouse gas emissions.²³ A list of the Attorney General's recommended measures and the Project's compliance with each applicable measure are listed in Table 5.6-9, PROJECT CONSISTENCY WITH THE ATTORNEY GENERAL'S RECOMMENDATIONS.

²² Letter Correspondence: Adam Fieseler, Air Pollution Inspector II, Shasta County Department of Resource Management, September 29, 2008.

²³ California Office of the Attorney General, *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level*, updated May 21, 2008.



TABLE 5.6-8
Estimated Annual Greenhouse Gas Emission Projections

Source	CO ₂	N ₂ O		CH ₄	
	Metric Tons/year	Tons/year	Metric Tons of CO ₂ EQ ⁷	Tons/year	Metric Tons of CO ₂ EQ ⁷
Construction Emissions¹					
• Years 2011 - 2018	1,151.0	0.15	42.0	0.24	4.56
Total Construction Related Greenhouse Gas Emissions⁸	1,193.24 mtCO ₂ eq				
THRESHOLD	10,000 mtCO ₂ eq/yr				
SIGNIFICANT?	No ²				
Operational Emissions					
• Area Source ³	1,067.0	0.00	0.00	0.00	0.00
• Mobile Source ⁴	6,446.0	0.52	146.0	0.50	9.5
Total Operational Emissions⁸	7,513.0	0.52	146.0	0.50	9.5
Indirect Emissions					
• Water Supply ⁵	515.0	0.005	1.4	0.03	0.57
• Electricity Consumption ⁶	867.0	0.01	2.8	0.05	0.95
Total Indirect Emissions⁸	1,382.0	0.015	4.2	0.08	1.52
Total (Operational and Indirect) Emissions⁸	8,895.0	0.535	150.2	0.58	11.02
TOTAL PROJECT-RELATED EMISSIONS⁸	9,056.2 mtCO₂eq/yr				
THRESHOLD	10,000 mtCO₂eq/yr				
SIGNIFICANT?	No				

Notes:

- 1 - Emissions calculated using CARB's Construction Equipment Emissions Table and the URBEMIS 2007 computer model output.
- 2 - This is a conservative analysis, as it compares the total green house gases emitted by construction activities (years 2011 through 2018) against the yearly threshold.
- 3 - Emissions calculated using URBEMIS 2007 computer model and the SCAQMD's *CEQA Handbook*, 2003.
- 4 - Emissions calculated using URBEMIS 2007 computer model and EMFAC 2007, *Highest (Most Conservative) Emission Factors for On-Road Passenger Vehicles and Delivery Trucks*.
- 5 - The City of Redding's draws its water supply from various local sources including the Sacramento River, Whiskeytown Lake, and the City's groundwater basin. According to the *Water Supply Assessment for the Salt Creek Heights Development*, prepared by RBF, dated June 2009, the Project's water demand is 385 acre-feet per year.
- 6 - Electricity Consumption emissions calculated using the SCAQMD's *CEQA Handbook*, 2003.
- 7 - CO₂ Equivalent values calculated using the U.S. Environmental Protection Agency Website, Greenhouse Gas Equivalencies Calculator, <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>, accessed September 2008.
- 8 - Totals may be slightly off due to rounding.
- 9 - The Project Applicant has committed to enrolling 50% of the on-site residential structures in REU's Earth Advantage Program.

Refer to Appendix 15.5, AIR QUALITY DATA, for detailed model input/output data.



**TABLE 5.6-9
 Project Consistency with the Attorney General's Recommendations**

Attorney General's Recommended Measures	Compliance with Attorney General's Recommendations
Efficiency	
Install light colored "cool" roofs, cool pavements, and strategically placed shade trees.	Consistent. The RMC requires tree planting on individual lots at one tree per 500 square feet of building area. Shade trees would also be placed along parkways within the Project site.
Install energy efficient heating and cooling systems, appliances and equipment, and control systems.	Consistent. Fifty percent of the subdivision will be enrolled in Redding Electric Utility's (REU) Earth Advantage Program. This program is designed to offer builders and developers multiple options on building techniques to meet program standards and criteria. A principle component of this program is to increase energy efficiency by 20 percent over California Title 24 standards.
Limit the hours of operation of outdoor lighting.	Consistent. The proposed neighborhood park would be subject to lighting standards and restrictions set forth in the RMC.
Water Conservation and Efficiency	
Create water-efficient landscapes.	Consistent. The Project would utilize existing natural landscaping at Project entrances and natural open space areas. A combination of native, drought-resistant plants, as well as an efficient irrigation system to minimize water usage will be implemented at the 13.9 acre neighborhood park site. Additionally, the Project would be required to comply with the State's Model Water Efficient Landscape Ordinance.
Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.	Consistent. Refer to response above.
Use reclaimed water for landscape irrigation in new developments. Install the infrastructure to deliver and use reclaimed water.	Consistent. The City of Redding does not have a reclaimed water pipeline in the vicinity of the Project site. However, it should be noted that landscaping for the Project primarily consists of drought-resistant and native plants.
Design buildings to be water-efficient. Install water-efficient fixtures and appliances.	Consistent. The Project would, at a minimum, install low-flow toilets, urinals, and fixtures pursuant to State water use efficiency standards and regulations.
Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.	Consistent. As previously stated, the Project would implement an efficient irrigation system to minimize water usage.



TABLE 5.6-9 (Continued)
Project Consistency with the Attorney General's Recommendations

Attorney General's Recommended Measures	Compliance with Attorney General's Recommendations
<p>Restrict the use of water for cleaning outdoor surfaces and vehicles.</p>	<p>Consistent. The Project proposes the development of residential uses which do not have any car wash facilities and does not anticipate the use of substantial amounts of water to wash off Project structures.</p>
<p>Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site.)</p>	<p>Consistent. The Project would implement Best Management Practices (BMPs) to address the most likely sources of stormwater pollutants resulting from the operation of the Project.</p>
<p>Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.</p>	<p>Consistent. The Project would implement low-flow toilets, urinals, and fixtures pursuant to State water use efficiency standards.</p>
<p>Solid Waste Measures</p>	
<p>Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.</p>	<p>Consistent. Redding Municipal Utilities operates a waste collection and recycling program in accordance with Assembly Bill 939. Additionally, recycling centers and transfer stations where local businesses and residents can take their recyclables are located throughout the City.</p>
<p>Land Use Measures</p>	
<p>Include mixed-use, infill, and higher density in development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods.</p>	<p>Consistent. The Project proposes a mixed residential development, including single- and multi-family housing units. The proposed Project proposes to complete the connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension to encourage use. The proposed Project would also construct a 10-foot sidewalk along the open-space side of Buenaventura Boulevard extension. Internally, the subdivision would contain 32 to 40-foot wide two way street sections to encourage bicycle use on these interior roadways and would also provide five-foot separated sidewalks with 6.5-foot landscaping buffers to the back of curb to promote walkability.</p>
<p>Incorporate public transit into project design.</p>	<p>Consistent. The proposed Project would not interfere with existing transit service or transit stops and would potentially generate transit ridership. It should also be noted that the proposed Project is located in close proximity to RABA's Route 2 which passes through the intersection of Eureka Way (SR-299) and Buenaventura Boulevard. Street design within the Project would accommodate bus turnouts at strategic locations as determined through final plan review.</p>



TABLE 5.6-9 (Continued)
Project Consistency with the Attorney General's Recommendations

Attorney General's Recommended Measures	Compliance with Attorney General's Recommendations
<p>Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.</p>	<p>Consistent. The proposed Project is a residential development that would also construct a 13.9 acre neighborhood park and improve the Buenaventura Trail. The proposed Project is to designate the approximately 142.8 acres of oak woodland habitat avoided as "Greenway" reserve, which could be managed for its recreational opportunities, wildlife habitat opportunities and fuels management. In addition, 20 tree retention groups and eight individual specimen trees have been identified for preservation. The Project Applicant also proposes tree planting within the neighborhoods, per City of Redding standards. The plantings would occur mainly in common areas, along streets, in front yards and within the proposed neighborhood park.</p>
<p>Develop "brownfields" and other underused or defunct properties near existing public transportation and jobs.</p>	<p>Consistent. The Project is not located on a "brownfield." However, the Project site is located within an area of the City served by RABA.</p>
<p>Include pedestrian and bicycle-only streets and plazas within developments. Create travel routes that ensure that destinations may be reached conveniently by public transportation, bicycling or walking.</p>	<p>Consistent. The Project proposes the development of residential uses, which would be developed to ensure that destinations are conveniently reachable by public transportation, bicycling, or walking. The Project is located within the RABA service area which provides service throughout the Redding area. It should also be noted that the proposed Project is located in close proximity to RABA's Route 2 which passes through the intersection of Eureka Way (SR-299) and Buenaventura Boulevard. Street design within the Project would accommodate bus turnouts at strategic locations as determined through final plan review.</p> <p>The proposed Project would be developed consistent with the City of Redding Parks, Trails and Open Space Master Plan. The proposed Project would contain 32 to 40-foot wide two way street sections which would not prohibit bicycle use on these interior roadways.</p>
<p>Transportation and Motor Vehicles</p>	
<p>Limit idling time for commercial vehicles, including delivery and construction vehicles.</p>	<p>Consistent. Construction vehicles are required by CARB to meet the terms set forth in CARB Regulation for in-use Off Road Diesel Vehicles, paragraph (d)(3) <i>Idling</i>. All vehicles, including diesel trucks accessing the Project site, would be subject to CARB measures and would be required to adhere to the 5-minute limit for vehicle idling.</p>
<p>Use low or zero-emission vehicles, including construction vehicles.</p>	<p>Consistent. The majority of vehicles that would access the Project would be expected to be in compliance with any vehicle standards that CARB adopts.</p>



TABLE 5.6-9 (Continued)
Project Consistency with the Attorney General's Recommendations

Attorney General's Recommended Measures	Compliance with Attorney General's Recommendations
Provide shuttle service to public transit.	Consistent. It should also be noted that the proposed Project is located in close proximity to RABA's Route 2 which passes through the intersection of Eureka Way (SR-299) and Buenaventura Boulevard. Street design within the Project would accommodate bus turnouts at strategic locations as determined through final plan review.
Provide public transit incentives such as free or low-cost monthly transit passes.	Consistent. Refer to the response above.
Promote "least polluting" ways to connect people and goods to their destinations.	Consistent. The Project proposes the development of residential uses. The Project is designed to allow residents to park their cars and utilize bicycle paths, public transportation, and/or walk to places within the City.
Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments.	Consistent. The proposed Project would incorporate bike lanes.
Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.	Consistent. The proposed Project would include construction of a 13.9 acre neighborhood park within the proposed development. Connection to the Sacramento River Trail via the Buenaventura Trail would be provided.

Source: State of California Department of Justice, Attorney General's Office, *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level*, updated May 21, 2008.



In addition to being compliant with many of the Attorney General's recommended design features, the Project is also consistent with the California Environmental Protection Agency Climate Action Team proposed early action measures to mitigate climate change. These early action measures are designed to ensure that projects meet the Governor's climate reduction targets, and are documented in the *Climate Action Team Report to Governor Schwarzenegger at the Legislature*, March 2006. Table 5.6-10, APPLICABLE GLOBAL CLIMATE CHANGE STRATEGIES, provides an analysis of the Project's conformance with these greenhouse gas reduction strategies.

As shown in Tables 5.6-9 and 5.9-10, the proposed Project would be consistent with the applicable measures recommended by the Office of the Attorney General and the California Climate Action Team. Compliance with such reduction strategies can reduce greenhouse gas emissions up to 40 percent, depending on the measure and its level of implementation. Additionally, the proposed Project would be located within 0.25 miles of public transit facilities, commercial/retail uses, and would include design features such as proximity to trails and bike paths as well as open space and parks. Access to trails increases pedestrian connectivity in the area and provides a corridor to existing development. Such design features can result in a reduction of greenhouse gas emissions of between 10 to 20 percent. Assuming a 10 percent reduction, Project emissions would be reduced by 905.62 mtCO₂eq/yr, resulting in 8,149.58 mtCO₂eq/yr. It should be noted that even without implementation of such Project design features, the proposed Project would still fall below the CARB and CAPCOA recommended threshold of 10,000 mtCO₂eq/yr. Therefore, impacts in this regard would be less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



**TABLE 5.6-10
 Applicable Global Climate Change Strategies**

Strategies for Reducing Greenhouse Gas Emissions ¹	Project Compliance with Reduction Strategy
<p><u>Vehicle Climate Change Standards.</u> Assembly Bill 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the California Air Resources Board in September 2004.</p>	<p>Compliant. Following a phase-in period, the majority of the vehicles that access the Project would be expected to be in compliance with any vehicle standards that CARB adopts. This standard would be enforceable by CARB. The City does not have authority to enforce this standard.</p>
<p><u>Other Light Duty Vehicle Technology.</u> New standards would be adopted to phase in beginning in the year 2017 model year.</p>	<p>Compliant. Following a phase-in period, the majority of the vehicles that access the Project would be expected to be in compliance with any vehicle standards that CARB adopts. This strategy would be enforced by CARB. The City does not have authority to enforce this standard.</p>
<p><u>Diesel Anti-Idling.</u> In July 2004, the California Air Resources Board adopted a measure to limit diesel-fueled commercial motor vehicle idling.</p>	<p>Compliant. All vehicles, including diesel trucks accessing the Project site, would be subject to CARB measures and would be required to adhere to the 5-minute limit for vehicle idling. The enforcing regulatory body would be CARB. The City does not have authority to enforce this standard.</p>
<p><u>Hydrofluorocarbon Reduction.</u> Ban retail sale of HFC in small cans; 2) Require that only low GWP refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs; 5) Enforce federal ban on releasing HFCs.</p>	<p>Compliant. This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations cover will comply with the measures. This strategy is dependent upon CARB adopting regulation measures and enforcing them. CARB would act as the enforcing agency.</p>
<p><u>Heavy-Duty Vehicle Emission Reduction Measures.</u> Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.</p>	<p>Compliant. These are CARB enforced standards; vehicles that access the Project that are required to comply with the standards will comply with the strategy. The City does not have authority to enforce this standard.</p>
<p><u>Achieve 50% Statewide Recycling Goal and Zero Waste - High Recycling - 1) Design locations for separate waste and recycling receptacles. 2) utilize recycled components in the building design.</u></p>	<p>Compliant. Pursuant to Assembly Bill 939, the City of Redding (including the proposed Project) would be required to divert 50 percent of generated solid waste stream. The City of Redding is currently meeting the 50 percent waste stream reduction goal.</p>
<p><u>Appliance Energy Efficiency Use.</u> Use of energy efficient appliances (i.e., washer/dryers, refrigerators, stoves, etc.)</p>	<p>Compliant. In October 2006, the State of California adopted Appliance Efficiency Regulations, which include standards for both Federally-regulated appliances and non-Federally-regulated appliances. These regulations would apply to the proposed Project.</p>
<p><u>Measures to Improve Transportation Energy Efficiency.</u> Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools and information that advance cleaner transportation and reduce climate change emissions.</p>	<p>Compliant. The Project promotes fuel conservation through design features, which promote pedestrian traffic and alternative transportation. This strategy would be enforced by the City through standard approvals.</p>



TABLE 5.6-10 (Continued)
Applicable Global Climate Change Strategies

Strategies for Reducing Greenhouse Gas Emissions ¹	Project Compliance with Reduction Strategy
<p><u>Smart Land Use and Intelligent Transportation.</u> Transportation Systems Encourage high-density residential and commercial mixed use.</p>	<p>Compliant. The proposed Project would provide residential uses in the western portion of the City consistent with the existing <i>General Plan</i> land use designation for the site. Public transportation as well as bike lanes/trails would provide access to nearby commercial uses that would be considered a smart land use and intelligent transportation system.</p>
<p><u>Water Use Efficiency Features.</u> To increase water use efficiency include use of both potable and non-potable water to the maximum extent practicable and use</p>	<p>Compliant. The proposed Project would be required to comply with California Health and Safety Code §17921.3, which sets efficiency standards for bathroom fixtures. Additionally, California Code of Regulations, title 20, Division 2, Chapter 4, Article 4, §1605.3 sets standards for washing machines and commercial pre-rinse spray valves.</p>
<p><u>Afforestation/Reforestation.</u> Clustering residential development to preserve forest/woodland resources, increasing density, and preserving and restoring open space³ would comply with this strategy.</p>	<p>Compliant. The proposed Project would include 96 clustered dwelling units which would have a decreased building footprint. The Project would also include the construction of a 13.9 acre neighborhood park, connection to the Sacramento River Trail and greenway areas. Additionally, the proposed Project would result in the planting of additional trees and vegetation at the Project site, retaining approximately 142.8 acres as open space.</p>
<p><u>LEED Certification.</u> The State now has 9 buildings that are certified by the Leadership in energy and Environmental Design (LEED) program, totaling more than 2 million square feet. LEED certification is being pursued on 85 additional new and renovated buildings totaling over 5.4 million square feet, as well as eight existing buildings totaling over 2.6 million square feet. Additional all smaller buildings less than 50,000 square feet in size are being designed and constructed to meet LEED standards.</p>	<p>Compliant. With 50 percent participation in REU's Earth Advantage Program and Project design features, the proposed Project is expected to reduce energy use. The proposed Project would be consistent with energy standards required by Title 24 and for those homes enrolled in the Earth Advantage Program, Title 24 standards will be exceeded by 20 percent.</p>
<p><u>Achieve 50 percent Statewide Recycling Goal.</u> In multi-family housing, separate recycling and waste receptacles should be planned.</p>	<p>Compliant. The City of Redding is required to meet the 50 percent statewide recycling goal, and would continue to implement solid waste reduction measures (required by City Ordinance). The City of Redding is currently meeting the 50 percent waste stream reduction goal.</p>

Note: 1. Only the applicable strategies for reducing greenhouse gas emissions were included.

Source: California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006.



5.7 BIOLOGICAL RESOURCES

The purpose of this section is to identify existing biological resources within the proposed Project area, analyze potential Project-related impacts, and to recommend mitigation measures to avoid or lessen the significance of identified impacts. Information in this section is based on the *Biological Resources Report*, prepared by ESA, dated April 2009, the *Wetland Delineation Report*, prepared by ESA, dated October 2007, the *Tree Evaluation Plan*, prepared by Cederic D. Twight, RFP, dated September 2007, and the *Addendum to the Tree Evaluation Plan*, dated January 2009 (refer to Appendix 15.6, BIOLOGICAL RESOURCES ASSESSMENTS). Additional information was obtained from the City of Redding *General Plan* and *General Plan EIR*.

This section addresses the vegetation communities present and the wildlife and plant species occurring, or potentially occurring, on the proposed Project site; discusses the suitability of habitats in the area to support special-status species and sensitive habitats, including jurisdictional waters of the U.S., and provides recommendations for any regulatory permitting or further analysis required. As part of the assessment, jurisdictional waters of the U.S. were delineated and mapped and subsequently reviewed and concurred with by the U.S. Army Corps of Engineers (refer to Appendix 15.6, BIOLOGICAL RESOURCES ASSESSMENTS).

For purposes of this analysis, approximately 294 acres were studied (compared to the approximately 272.9 acres of the proposed Project). The additional 21.1 acres takes into account potential disturbance areas for the proposed Buenaventura Boulevard extension, located in the southeastern portion of the site.

5.7.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The proposed project is located in the City of Redding in Shasta County, California and is characterized as a dissected plain located between Klamath Mountains to the north and west, and the northernmost extent of the Sierra Nevada foothills to the east. The plain is highly dissected by streams that drain toward the Sacramento River. Slopes range from nearly level to very gentle on remnants of depositional surfaces to moderately steep to steep in ravines.

The climate of the region is characterized as hot and subhumid and average precipitation is approximately 20 to 40 inches per year. Mean maximum temperature is approximately 76 degrees Fahrenheit (° F) and mean minimum temperature is approximately 52° F. Predominant upland vegetation communities within the region include: oak woodland, oak-pine woodland, oak savannah, chaparral, and annual grassland. Aquatic environments in the region include: seasonal and perennial streams that drain to the Sacramento River; vernal pools and other seasonal wetlands; freshwater marsh; groundwater seeps; and man-made ponds and reservoirs.

LOCAL SETTING

The proposed Project site is approximately 272.9 acres in size with electric utility corridors crossing the study area. Predominant upland vegetation communities within the region include: blue oak woodland, oak-pine woodland, oak savannah, chaparral, and annual grassland. Aquatic environments in the region include: seasonal and perennial streams that drain to the Sacramento River; vernal pools and other seasonal wetlands;



freshwater marsh; groundwater seeps; and man-made ponds and reservoirs. Topography on-site varies from a nearly flat terrace at the center of the site, to moderately steep to very steep canyons. Elevation within the project area ranges from 520 to 740 feet above mean sea level. At the landscape level, the topography consists of incised canyons that slope to the northeast towards the Sacramento River. The hydrology in the study area has been highly altered due to past mining activities. Land use immediately surrounding the Project area is characterized by low density developed areas. The only current land use within the study area is electric utility corridors, with several utility maintenance roads crossing the proposed Project.

5.7.2 METHODOLOGY

BIOLOGICAL ASSESSMENT METHODOLOGY

Biological resources within the Project area were identified through field reconnaissance, a review of pertinent literature, and database queries. Plant communities and wildlife habitats were identified using aerial photo interpretation and field reconnaissance. Prior to field inspection, species characteristics and habitat requirements were reviewed to aid in field recognition of suitable habitats and visual identification. Existing literature and databases for the region were also reviewed prior to field surveys to identify which biological resources would likely be encountered.

On September 6, 2007, a reconnaissance-level survey of the Project area was conducted to identify upland habitats and the potential for the site to support special-status species. The survey consisted of walking meandering transects and mapping the vegetative communities at the site. All areas within the project area were evaluated for the potential to support regionally occurring special-status species and the presence of any other biologically sensitive resources. Based on the information collected, ESA identified specific biological constraints that may be encountered by site development.

WETLANDS DELINEATION METHODOLOGY

A delineation of the proposed Project area was conducted on August 1, 2, 8, and 9, and September 27, 2007. The delineation used the "Routine Determination Method" as described in the *1987 Corps of Engineers Wetland Delineation Manual*, hereafter called the "1987 Manual." The 1987 Manual was used in conjunction with the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, hereafter called the "Arid West Supplement." For areas where the 1987 Manual and the Arid West Supplement differ, the Arid West Supplement was followed.

Three positive wetland parameters must normally be present for an area to be wetland: 1) a dominance of wetland vegetation, 2) presence of hydric soils, and 3) presence of wetland hydrology. Presence or absence of positive indicators for wetland vegetation, soils and hydrology was assessed per the 1987 Manual and Arid West Supplement guidelines. Data points were taken within suspected wetlands and a paired point taken (where applicable) in nearby uplands.

At each data point, a visual assessment of the dominant plant species within a 6-foot radius was made. Dominant species were assessed using the recommended "50/20" rule per the Arid West Supplement. Plants were identified to species using the *Jepson Manual: Higher Plants of California*. The *National List of Plant Species that Occur in Wetlands* was used to determine the wetland indicator status of all plants. Soils at each data point were characterized by texture; color was described using Munsell soil color charts.



Presence of wetland hydrology was determined at each data point by presence of one or more of the following primary and/or secondary indicators, per guidance of the Arid West Supplement. These indicators include: visual observation of inundation, observation of soil saturation within 12 inches of the surface, oxidized root channels, biotic crust, sediment deposits, flow or drift accumulations at channel margins, channel flow marks in beds, scouring, surface cracking, water staining, and topography ("wetland drainage patterns"). Evidence of wetland hydrologic characteristics in channels consisted of primary visual observations, focusing on drainage patterns, drift lines, sediment deposits, and watermarks within the channel.

Methodology for Drainages

Drainages with obvious bed and banks were characterized by noting vegetation, geomorphology (e.g., incision) and hydrologic characteristics, and by measuring representative channel bank cross-sections to obtain average bankfull width (i.e., ordinary high water mark).

Mapping and Acreage Calculations

All features including data collection points, wetland boundaries, and channel courses were recorded using a Global Positioning System (GPS) unit (Trimble GeoXT) with real-time differential correction and an instrument-rated mapping accuracy of +/-3 meters, or were delineated on aerial photography using Geographic Information System (GIS) software (ArcGIS 9.1). Wetland boundaries were demarcated in the field using GPS by walking the margin of the wetland. Channels were delineated using GIS software, aerial photography, and topographic data.

In the office, GPS data were downloaded and mapped using GIS software on an overlay of both topography and geo-referenced aerial photography. GPS-determined wetland boundaries and data points were visually confirmed. Channel width was recorded in the field. Linear length of each channel was obtained by ArcGIS, and multiplied by the channel's average width to obtain acreage. Acreage of wetland polygons was determined by ArcGIS.

TREE SURVEY METHODOLOGY

Initial tree survey mapping was done by utilizing both aerial photography and ground reconnaissance. Site reconnaissance and tree inventory plots within the Project area were completed on August 1st and 21st, and September 5, 2007. A Registered Professional Forester then evaluated the proposed Project area to delineate the vegetation cover types. The vegetation cover types were delineated through aerial photo interpretation and by walking meandering transects throughout the proposed Project area.

Variable radius plots were located systematically with a random start within the various stands of trees found in the proposed Project area. At each plot, individual tree and stand data was estimated including: Basal area, overstory and understory canopy cover, tree species, tree diameter, brush species, and slope gradient. The low Basal Area Factor (BAF) was utilized due to the relatively small diameter of the trees present on the site. The low BAF ensured an adequate sample population at each plot to accurately capture the stand condition on the site. Tree diameter and height were measured using a diameter tape and clinometer and ocularly to the nearest 1" and 5' respectively. Individual tree data was collected for those trees that were measured "in" with the Spiegel Relaskop. The general condition of the tree and its components (root collar, trunk, limbs, foliage) were assessed and an overall vigor ("Condition") assigned. The "Condition" of the tree is defined as follows:



- Excellent: Tree is without any visible deficiencies. Tree is in excellent health and is structurally sound, with little evidence of dieback and good overall annual growth. The tree shows no sign of disease, decay, or mistletoe infestation. The tree has a balanced branching structure.
- Good: Tree has no major deficiencies but may have minor defects such as minor dieback or overcrowding. Tree is in good health and is structurally sound. Minor defects are not detrimental to overall health of tree.
- Fair: Tree has no major deficiencies but many minor defects. Tree is in average health and may have some structural deficiencies such as decay and numerous dead limbs. Overall health and integrity of the tree is not adversely affected at present, but the tree may have limited growth, and unbalanced or asymmetrical form. Deficiencies may be detrimental to long-term health of tree.
- Poor: Tree has major deficiencies that are detrimental to health of tree, including major decay in the trunk or main limbs, extensive dieback, sparse foliage, extreme overcrowding, and unbalanced or asymmetrical form.

Each plot location was referenced with GPS. The plot data was collected to accurately characterize and describe the condition of the various stand types occupying the Project area. Individual candidate trees or groups of trees were mapped in accordance with RMC §18.45.070, *Tree Management Ordinance*, that lend themselves to retention, have a high likelihood for long-term survival within the developed area, are strategically situated to provide aesthetic benefits to the proposed Project and would provide a buffer to land use areas adjacent to the Project site. The areas that meet these criteria are listed below:

- Road A from Eureka Way (SR-299) to Road C;
- Road B from Eureka Way (SR-299) to Road O;
- Buenaventura Boulevard from Lot 279 to the edge of the 20 percent slopes at Lot 332;
- Road O from Lot 310 to Road N;
- Road N from Road O to Lot 267;
- Road A at the north terminus of Road O;
- Road E adjacent to the open space at Road F; and
- All cul-de-sac bulbs that abut open space.

The area from east of Road A and south of Road C was considered for evaluation, however, the area conducive to retention of trees (below Road C and outside of the high density neighborhood) is generally on slopes greater than 20 percent and trees in the area will be retained following construction activities.

The areas of proposed development outside the listed areas generally have a tree canopy that is evenly disbursed and trees similar in character. Fieldwork within these areas did not identify any candidate trees or groups of trees warranting retention due to their exceptional characteristics.

The fieldwork to support this effort involved a comprehensive survey of the Project footprint. The tree survey for the selected areas identified the location and size of the trees greater than 4" diameter at breast height (DBH), on slopes less than 20 percent, in and adjacent to the areas indicated above. The trees measured have an average diameter of eight inches DBH and an average height of 25 feet.



5.7.3 EXISTING CONDITIONS

EXISTING BIOLOGICAL COMMUNITIES

Plant communities are assemblages of plant species that occur together in the same area. They are defined by species composition and relative abundance. Plant communities occurring in the proposed Project area include annual grassland, mixed chaparral, blue oak woodland, open water, riparian wetland, and seasonal wetland. These plant communities can be generally correlated to habitats for wildlife. The plant communities and corresponding wildlife habitat types that occur in the proposed Project area are identified in Table 5.7-1 PLANT COMMUNITIES AND JURISDICTIONAL WETLANDS WITHIN THE PROJECT AREA, along with a discussion of plants known to occur within the communities (also refer to Figure 5.7-1, HABITATS WITHIN THE PROJECT AREA). Table 5.7-2, POTENTIALLY IMPACTED PLANT COMMUNITIES, identifies the community type and approximate number of acres impacted by the proposed Project.

**TABLE 5.7-1
 Plant Communities and Jurisdictional Wetlands Within the Project Area**

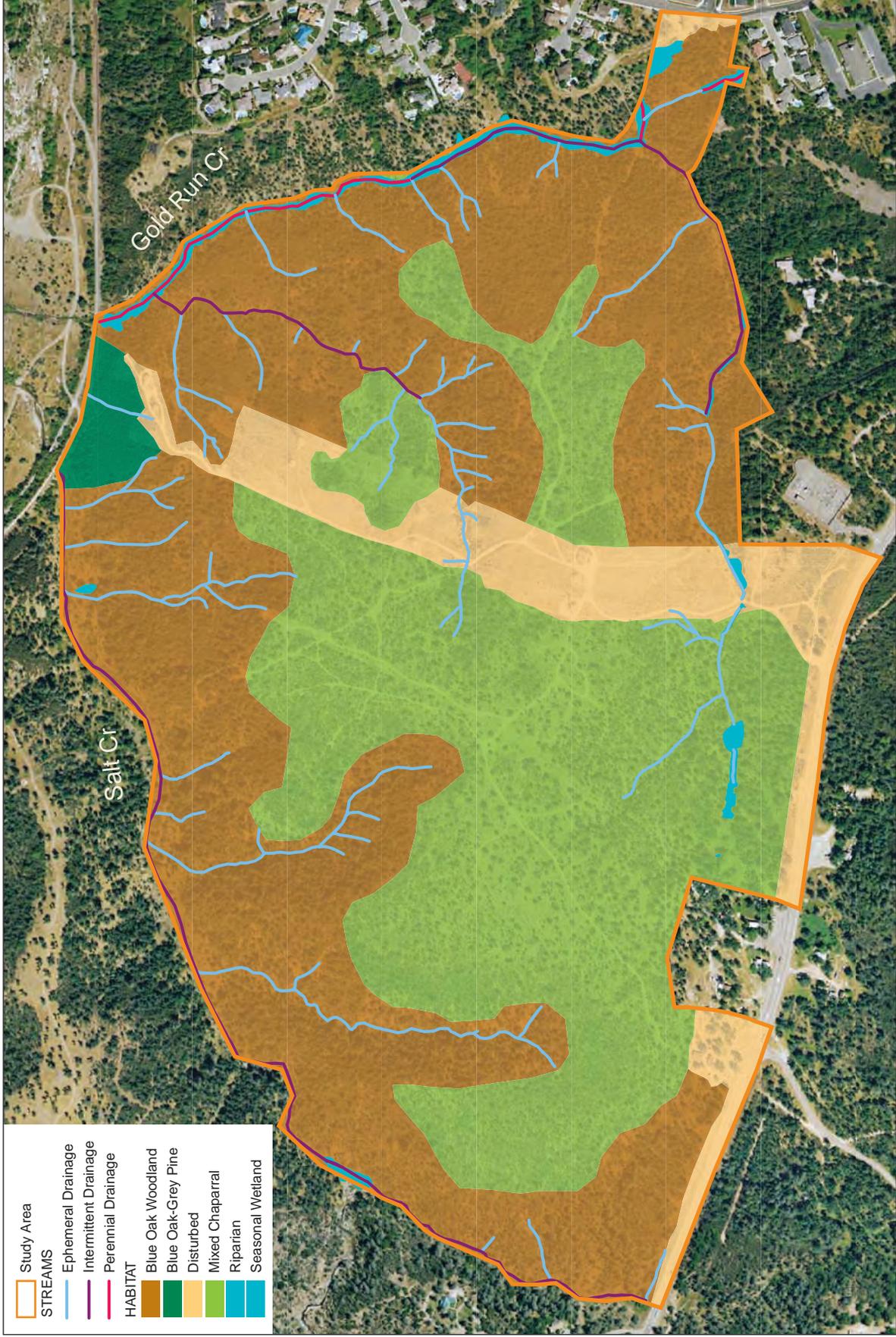
Community Type	Dominant Plant Species	Approximate Acres	Percent of Project Area
Blue Oak Woodland	blue oak, live oak	145.82	49.56%
Blue Oak-Gray Pine Woodland	blue oak, gray pine	3.94	1.34%
Urban/Disturbed	barren, man-made structures	28.47	9.68%
Mixed Chaparral (MCH)	white-leaf manzanita, common manzanita	112.28	38.16%
Palustrine Forested (Riparian)	willow, buttonwillow	3.65	1.24%
Palustrine Emergent (Seasonal Wetland)	spikerush, curly dock, perennial rye grass	0.08	0.03%
Total		294.23	100.0%

Source: *Biological Resources Report*, ESA, April 2009.

**TABLE 5.7-2
 Potentially Impacted Plant Communities**

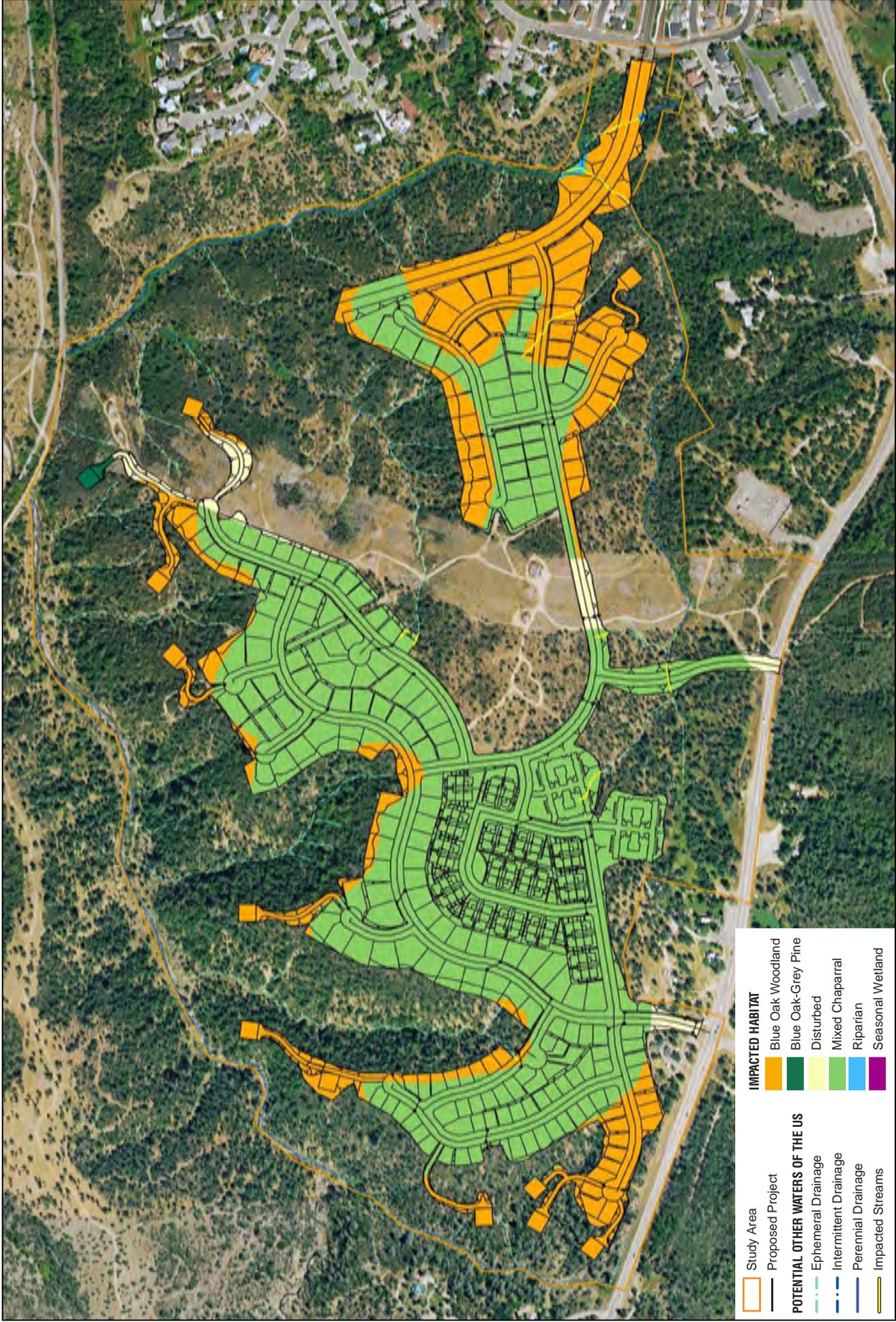
Community Type	Approximate Number of Acres Impacted	Percent Affected
Blue Oak Woodland (BOW)	30.60	21%
Blue Oak-Gray Pine Woodland (BOP)	0.26	7%
Mixed Chaparral (MCH)	80.35	72%
Urban / Disturbed	2.68	9%
Palustrine Forested (Riparian)	0.11	3%
Palustrine Emergent (Seasonal Wetland)	0.00	0%
Total	114.00	38%

Source: *Biological Resources Report*, ESA, April 2009.



Source: ESA Biological Resources Report, October 2007.
 Globexplorer, 2006; SPI, 2007.





- Study Area
 - Proposed Project
- POTENTIAL OTHER WATERS OF THE US**
- Ephemeral Drainage
 - Intermittent Drainage
 - Perennial Drainage
 - Impacted Streams
- IMPACTED HABITAT**
- Blue Oak Woodland
 - Blue Oak-Grey Pine
 - Disturbed
 - Mixed Chaparral
 - Riparian
 - Seasonal Wetland

Source: ESA Biological Resources Report, 2007, 2008.
 Globexplorer, 2006; SPI, 2007.



SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Potentially Impacted Habitat Due to Proposed Project

Figure 5.7-2



Blue Oak Series/Blue Oak Woodland

This plant community occurs throughout the study area and is dominated by blue oak (*Quercus douglasii*), with interior live oak (*Quercus wislizenii*) and grey pine (*Pinus sabiniana*). Shrub species associated with this mixed woodland community include poison oak (*Toxicodendron diversilobum*), white-leaf manzanita (*Arctostaphylos viscida* spp. *viscida*), and common manzanita (*Arctostaphylos manzanita*). The understory of this plant community is dominated by annual grass species. Blue oak woodlands provide cover and food for small mammals. Mammal species that may occur in wooded areas include the California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), broad-footed mole (*Scapanus latimanus*), and black-tailed jackrabbit (*Lepus californicus*).

Trees in this woodland provide nesting and foraging habitat for migrating and resident birds. Raptors that may utilize this habitat include the American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), and Cooper's hawk (*Accipiter cooperii*). Additional bird species that have the potential to use this habitat include Anna's hummingbird (*Calypte anna*), oak titmouse (*Baeolophus inornatus*), and the spotted towhee (*Pipilo maculatus*).

Blue oak woodland habitat is dry in nature and probably does not support many reptile or amphibian species. It may provide suitable foraging sites and cover for the common kingsnake (*Lampropeltis getulus*), Pacific gopher snake (*Pituophis melanoleucus catenifer*), striped racer (*Masticophis lateralis*), and western fence lizard (*Sceloporus occidentalis*).

Foothill Pine Series/Blue Oak-Gray Pine Woodland

Blue oak-gray pine woodland occurs in the northwest corner of the Project area. Blue oak trees and gray pine trees comprise this habitat though blue oaks tend to dominate the canopy. The annual grassland species that dominate the understory include yellow star-thistle (*Centaurea solstitialis*), wild oats (*Avena barbata*), and perennial rye grass (*Lolium perenne*). The wildlife species associated with this habitat are very similar to those described above in the blue oak woodland habitat.

Urban/Disturbed

The urban/disturbed portion of the Project area is characterized by graded/barren land, dirt roadways, paved roads, houses, and man-made structures. Ruderal vegetation occurs along roadsides. This vegetation type is subjected to ongoing or past disturbances (e.g., vehicle use, mowing, herbicide application). The majority of plant species that occur in these disturbed areas are various annual grasses and forbs of Eurasian origin, many of which also occur in the grasslands. Common plants in urban areas include annual grasses, prickly lettuce (*Lactuca serriola*), shortpod mustard (*Hirschfeldia incana*), milk thistle (*Silybum marianum*), radish (*Raphanus sativus*), and bristly ox-tongue (*Picris echioides*). There are also a few natives that are adapted to grow in these disturbed sites such as turkey mullein (*Eremocarpus setigerus*), hayfield tarweed (*Hemizonia congesta*), and California poppy (*Eschscholzia californica*). These areas provide limited opportunities for wildlife.



Mixed Chaparral

This plant community is the dominant plant community within the study area. The dominant shrub species in this community are poison oak, white-leaf manzanita, common manzanita, and buck brush (*Ceanothus cuneatus* var. *cuneatus*). The understory of this plant community is dominated by annual grass species.

No wildlife species are restricted to this habitat, however many wildlife species utilize this habitat including Anna's hummingbird, brush mouse (*Peromyscus boylii*), California quail (*Callipepla californica*), ring-necked snake (*Diadophis punctatus*), sage sparrow (*Amphispiza belli*), spotted towhee, and the wrenit (*Chamaea fasciata*).

Palustrine Forested

Palustrine forested habitats in the study area are present along the larger channels and are dominated almost exclusively by willow (*Salix* spp.) and buttonwillow (*Cephalanthus occidentalis* var. *californicus*) in the overstory. The understory is comprised of freshwater marsh species including rushes (*Juncus* spp.) and flat-leaved parsley (*Torilis arvensis*).

Palustrine forested habitat provides cover and food for small mammals. Mammal species that may occur in these areas include California myotis (*Myotis californicus*), brush rabbit (*Sylvilagus bachmani*), raccoon (*Procyon lotor*), California vole, and black bear (*Ursus americanus*).

Trees in this habitat provide nesting and foraging habitat for migrating and resident birds. Bird species that have the potential to use this habitat include great egret (*Ardea alba*) and great blue heron (*Ardea herodias*). Palustrine forested habitat also supports numerous reptile or amphibian species including the Pacific chorus frog (*Hyla regilla*).

Palustrine Emergent

Palustrine emergent habitats are ephemeral wetlands that pond or remain flooded for extended periods during a portion of the year, often the wet season, then may dry in spring or early summer. These features are typically associated with constructed drainage features or disturbed areas. Palustrine emergent habitats in the study area occur in shallow depressions and are dominated by native and non-native species. Common wetland species in these features include spikerush (*Eleocharis macrostachya*), curly dock (*Rumex crispus*) and perennial ryegrass.

Palustrine emergent habitat may support a diversity of birds, invertebrates, amphibians, and a few reptiles which may use the wetland for foraging, cover, and/or breeding. Common wildlife species that may use seasonal wetlands include common garter snake (*Thamnophis sirtalis*), Pacific chorus frog, and black phoebe (*Sayornis nigricans*). Refer to Table 5.7-3, PLANT SPECIES OBSERVED WITHIN PROJECT SITE, for a list of those plant species observed on the proposed Project site.



TABLE 5.7-3
Plant Species Observed Within Project Site

Scientific Name	Common Name	Family Name	Wetland Indicator Status*
<i>Ailanthus altissima</i>	Tree of Heaven	Simaroubaceae	FACU
<i>Anthoxanthum aristatum</i>	Vernal grass	Poaceae	NL
<i>Arctostaphylos manzanita</i>	Common manzanita	Ericaceae	NL
<i>Arctostaphylos viscida</i> spp. <i>viscida</i>	White-leaf manzanita	Ericaceae	NL
<i>Artemisia douglasiana</i>	Mugwort	Asteraceae	FACW
<i>Avena fatua</i>	Wild oat	Poaceae	NL
<i>Bromus diandrus</i>	Ripgut grass	Poaceae	NL
<i>Bromus hordeaceus</i>	Soft chess	Poaceae	FACU
<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buck brush	Rhamnaceae	NL
<i>Cephalanthus occidentalis</i> var. <i>californicus</i>	Buttonwillow	Rubiaceae	OBL
<i>Cercis occidentalis</i>	Redbud	Fabaceae	UPL
<i>Chlorogalum angustifolium</i>	Soap plant	Liliaceae	NL
<i>Eleocharis macrostachya</i>	Spikerush	Cyperaceae	OBL
<i>Eremocarpus setigerus</i>	Turkey mullein	Euphorbiaceae	NL
<i>Eriogonum nudum</i>	Nude buckwheat	Polygonaceae	NL
<i>Erodium botrys</i>	Filaree	Geraniaceae	NL
<i>Fraxinus dipetala</i>	California Ash	Oleaceae	NL
<i>Geranium molle</i>	Geranium	Geraniaceae	NL
<i>Heteromeles arbutifolia</i>	Toyon	Rosaceae	NL
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	Poaceae	FAC
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Foxtail barley	Poaceae	NI
<i>Juncus xiphioides</i>	Rush	Juncaceae	OBL
<i>Lolium multiflorum</i>	Italian ryegrass	Poaceae	NL
<i>Lolium perenne</i>	Perennial ryegrass	Poaceae	FAC
<i>Lotus purshianus</i> var. <i>purshianus</i>	Spanish lotus	Fabaceae	NL
<i>Montia fontana</i>	Water chickweed	Portulacaceae	OBL



TABLE 5.7-3 (Continued)
Plant Species Observed Within Project Site

Scientific Name	Common Name	Family Name	Wetland Indicator Status*
<i>Pinus ponderosa</i>	Ponderosa pine	Pinaceae	FACU
<i>Pinus sabiniana</i>	Grey Pine	Pinaceae	NL
<i>Populus fremontii</i>	Fremont cottonwood	Salicaceae	FACW
<i>Quercus berberidifolia</i>	Scrub oak	Fagaceae	NL
<i>Quercus douglasii</i>	Blue Oak	Fagaceae	NL
<i>Quercus garryana</i>	Oregon White Oak	Fagaceae	NL
<i>Quercus wislizenii</i>	Interior Live Oak	Fagaceae	NL
<i>Rhamnus tomentella</i>	Hoary Coffeeberry	Rhamnaceae	NL
<i>Rubus discolor</i>	Himalayan blackberry	Rosaceae	FACW*
<i>Rumex crispus</i>	Curly dock	Polygonaceae	FACW
<i>Salix</i> sp.	Willow	Salicaceae	FACW-OBL
<i>Sambucus mexicana</i>	Blue elderberry	Caprifoliaceae	FAC
<i>Styrax redivivus</i>	Snowdrop bush	Styracaceae	NL
<i>Torilis arvensis</i>	Flat-leaved parsley	Apiaceae	NL
<i>Toxicodendron diversilobum</i>	Poison oak	Anacardiaceae	NL
<i>Trifolium</i> sp.	Clover	Fabaceae	NL
<i>Typha angustifolia</i>	Narrow-leaf cattail	Typhaceae	OBL
<i>Typha latifolia</i>	Broad-leaf cattail	Typhaceae	OBL
<i>Vitis californica</i>	Wild grape	Vitaceae	FACW

Source: *Wetland Delineation Report*, ESA, October 2007.

*Wetland Indicator Status (Reed, 1988)

OBL - Obligate Wetland

FACW - Facultative Wetland

FAC - Facultative

FACU - Facultative Upland

UPL - Obligate Upland

NI - No Indicator

NL - Not Listed

NO - Does Not Occur in Region

(*) - Indicator assigned is tentative



SENSITIVE NATURAL COMMUNITIES

A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, structurally complex, or is in other ways of special concern to local, state, or federal agencies. CEQA identifies the elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Game (CDFG) tracks sensitive natural communities in the California Natural Diversity Database (CNDDDB). Riparian habitat within the Project area is considered a sensitive natural community.

WETLANDS AND OTHER WATERS OF THE U.S.

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines wetlands in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the U.S. (see definition below for “other waters of the U.S.”). The Corps is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act. CDFG does not normally have direct jurisdiction over wetlands unless they are subject to jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFG has trust responsibility for wildlife and habitats pursuant to California law.

“Other waters of the U.S.” refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

A total of 7.57 acres of potential jurisdictional features occur within the 294-acre study area. Jurisdictional features include eleven (3.73 acres) wetlands and 68 (3.84 acres and 32,144.7 linear feet) other waters of the U.S. Wetlands within the study area include 3.65 acres of riparian wetland and 0.08 acres of seasonal wetlands.

On-Site Wetland / Riparian Habitat

Riparian wetlands (approximately 3.65 acres) in the proposed Project area are present along the larger channels and are dominated almost exclusively by willow (*Salix* spp.) and buttonwillow (*Cephalanthus occidentalis* var. *californicus*) in the overstory. The understory is comprised of freshwater marsh species including rushes (*Juncus* spp.) and flat-leaved parsley (*Torilis arvensis*).

Seasonal wetlands (approximately 0.08 acres) in the proposed Project area occur in shallow depressions and are dominated by native and non-native species. Common wetland species in these features include spikerush (*Eleocharis macrostachya*), curly dock (*Rumex crispus*) and perennial ryegrass (*Lolium perenne*).



Riverine habitat is present in small portions of the study area. Some areas of the banks support species common to freshwater emergent wetlands or riparian areas including cattail (*Typha spp.*) and willow. These areas are mapped as riverine only when they are present within the defined bed and bank of the river channel.

OTHER WATERS OF THE U.S.

Perennial Drainage

According to the Corps, perennial channels are streams, or stream portions, that flow continuously during the calendar year. Three perennial channels were identified in the study area. The extent of these channels within the study area is 0.35 acres (2,013 linear feet).

Intermittent Drainage

According to the Corps, an intermittent channel has flowing water during certain times of the year, when groundwater influences stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. Three intermittent channels (ID-1 through ID-3) were identified in the study area. The extent of these channels within the study area is 2.22 acres (9,086 linear feet).

Ephemeral Drainage

According to the Corps, an ephemeral drainage has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow. Sixty-two ephemeral channels (ED-1 through ED-62) were identified in the study area. The extent of these channels within the study area is 1.26 acres (20,619 linear feet).

PROJECT SITE HYDROLOGY OVERVIEW

The study area terrain varies from a nearly flat terrace at the center of the site, to moderately steep to very-steep canyons that drain in all directions. In portions of the site the natural hydrology is interrupted by unimproved roadways. The study area generally drains northwest towards the Sacramento River.

The majority of the study area is drained by surface percolation, overland sheet flow, ephemeral and intermittent drainages that convey flow to larger drainages. The study area contains two large drainages, Gold Run and Salt Creeks, which are at the edges of the study area. In general, these drainage are fed primarily by surface water derived from direct precipitation and input from intermittent and ephemeral drainages. Additionally, due to the high level of erosion within the project area there are several nonjurisdictional swales and gullies present. These non-jurisdictional swales and gullies are primarily present in the canyons and along roadways where overland sheet flow is high.

The wetlands occurring in the study area are varied in their hydrology. Riparian and freshwater emergent wetlands are either adjacent to or within perennial water features (drainages) and receive water from the water table and storm events. Seasonal wetlands are found in low-lying areas where drainage is restricted, and they derive hydrology from surface sources typically associated with precipitation events and/or groundwater from perched water tables restricted by hardpan soil layers.



FISHERY RESOURCES

Regional Setting

The Sacramento River is the dominant aquatic feature of the northern Sacramento Valley. The River and its tributaries provide important spawning and rearing habitat for anadromous fish, as well as habitat that supports resident fish communities. The fish populations inhabiting the Sacramento River support popular fisheries in the region. Keswick Dam, a re-regulating facility immediately downstream of Shasta Dam (which is located northwest of Redding), marks the upstream limit of anadromous fish migration and access to freshwater habitat on the Sacramento River. The presence and operation of these dams have altered the historic distribution of resident and anadromous fish in the Sacramento River basin. The operation of the dams has resulted in a number of well-documented changes in riverine, riparian, and estuarine habitat; many of which have been detrimental to native fish and other aquatic species.

Recent conservation and ecosystem restoration efforts throughout the Sacramento River basin have begun to stabilize and reverse declines of some river- and riparian-dependent species. Watershed conservation and tributary restoration efforts, improved riparian corridor management, fish passage and protection improvement projects at irrigation diversions, installation of a temperature control device at Shasta Dam, reduction of acid-metal runoff from the Iron Mountain Mine, spawning gravel supplementation, and improvements to hatchery programs have all been implemented locally as part of these efforts.

Many Sacramento River tributaries are important spawning areas for anadromous fish, resident trout and other native fishes, even though some of these tributaries may go dry during the summer.

Native Anadromous Fish Species

The native anadromous salmonid species of interest in the Sacramento River and its tributaries include Chinook salmon (*Oncorhynchus tshawytscha*) and Steelhead trout (*Oncorhynchus mykiss*). Four runs of Chinook are present in the Central Valley and are distinguished by the timing of adult spawning migrations into the river: fall, late fall, winter, and spring. NOAA Fisheries determined that the four Central Valley Chinook races make up only three distinct Evolutionarily Significant Units (ESUs): the fall/late fall-run ESU, the spring-run ESU, and the winter-run ESU. One race of Steelhead, the fall/winter-run, is known from the Central Valley. Winter-run Chinook are listed as endangered under both the ESA and CESA. Central Valley Steelhead are also federally listed as threatened species.

Chinook salmon are medium- to large-bodied anadromous fish that spawn in freshwater, migrate to the ocean as juveniles, achieve significant growth, and return to freshwater at varying degrees of sexual maturity. When mature, adult Chinook salmon migrate upstream in search of suitable spawning areas in the rivers and streams of their birth. All life stages of salmon are present in the Sacramento River virtually throughout the year, as the upper Sacramento River and its tributary streams provide essential holding, spawning, and rearing habitat.

“Steelhead” typically refers to the anadromous form of Rainbow trout. Similar to other Pacific salmon, Steelhead trout adults spawn in freshwater and spend a part of their life at sea. However, unlike Chinook, Steelhead trout may spawn on more than one occasion during their life. The typical pattern for Steelhead is to rear in freshwater streams for 1 to 3 years, followed by 1 to 3 years of residency in the marine environment.



LOCAL SETTING

Central Valley steelhead (*Oncorhynchus mykiss*) and Chinook salmon (*Oncorhynchus tshawytscha*)

Fish species listed for protection under the Federal Endangered Species Act that are known to occur in the Sacramento River in the vicinity of the proposed Project include winter-run Chinook salmon, spring-run Chinook salmon, and Central Valley steelhead. Federal species of concern also occur in the vicinity of the proposed project including Central Valley fall and late fall-run Chinook.

Adult Chinook salmon (spring, fall, late-fall, and winter-run) migrate from the Pacific Ocean upstream within the Sacramento River. The river reach associated with the proposed project serves as an upper reach terminus of the migratory corridor for adult upstream migration. Winter run spawn in the mainstream Sacramento, and would not likely use stream channels in the project area. In addition, stream channel habitat in the project area is not suitable for spring run Chinook. Steelhead and fall-run Chinook are the most likely anadromous fish species to seasonally occur within stream channels in the proposed Project area.

The adult upstream migration for Chinook typically occurs during the winter, spring, fall, and late-fall. The seasonal timing of adult upstream migration corresponds with the seasonal designation for each Evolutionary Significant Unit (ESU) of Chinook salmon. Juvenile Chinook salmon are present in greatest abundance during the spring (April - June) and during the winter (November - January; February - March). Adult steelhead typically migrate upstream within the Sacramento River during the winter (November - January) to upstream spawning areas (tributaries). Juvenile steelhead can remain in freshwater streams from one to three years before entering the ocean.

Based on observations on July 22, 2008 of rearing young of the year Central Valley steelhead within Gold Run Creek in the vicinity of the proposed Project, presence for the drainage should be assumed (in addition to Salt Creek).

Special-Status Species

Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this report following a convention that has developed in practice but has no official sanction. The various categories encompassed by the term, and the legal status of each, are discussed in the Regulatory Setting section of this report. For the purposes of this assessment, the term "special-status" includes:

- Species that are federally listed or proposed under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Species that are candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- Species that are state listed or proposed under the California Endangered Species Act (14 CCR 670.5);



- Species listed by the United States Fish and Wildlife Service (USFWS) or CDFG as a species of concern (USFWS), rare (CDFG), or of special concern (CDFG);
- Fully protected animals as defined by the State of California (CDFG Code §3511, §4700, and §5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (*CEQA Guidelines* §15380);
- Plants listed as rare or endangered under the California Native Plant Protection Act (State of California CDFG Code §1900 *et seq.*); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in CNPS 2007).

A list of special-status plant and animal species that have the potential to occur within the vicinity of the Project area was compiled based on data in the CNDDDB (CDFG, 2007), CNPS literature (CNPS, 2007), and the USFWS of Federal Endangered and Threatened Species that may be Affected by Projects in the "Redding, CA" 7.5' Quadrangle (USFWS, 2007). Special status plants and animals with the potential to occur within the Project area are provided in Table 5.7-4, POTENTIALLY IMPACTED SPECIAL-STATUS SPECIES IN THE PROJECT AREA. Additionally, Table 5.7-4 indicates each species potential to be impacted by the proposed Project.

Twenty-two species with unlikely potential to be impacted by the proposed development were identified, 16 species with a low potential to be impacted by the proposed development, and four species with a medium potential to be impacted by the proposed Project. The "Potential for Impact" category is defined as follows:

- Unlikely: The project site and/or immediate area do not support suitable habitat for a particular species, and therefore the project is unlikely to impact this species.
- Low Potential: Project site and/or immediate area only provide limited habitat for a particular species that is likely avoided by proposed development. In addition, the known range for a particular species may be outside of the immediate project area.
- Medium Potential: The project site and/or immediate area provide suitable habitat for a particular species, and proposed development may impact this species. Mitigation will likely avoid potential impacts.
- High Potential: The project site and/or immediate area provide ideal habitat conditions for a particular species and/or known populations occur in immediate the area. Proposed development will directly impact habitat associated with this species.



TABLE 5.7-4
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
Mammals			
<i>Martes pennanti</i> (<i>pacifica</i>) DPS Pacific fisher	FC/CSC/--	Inhabits mixed conifer and Douglas fir forests, and red fir, lodgepole pine, and mixed evergreen/broad leaf forest. Dens in cavities near the tops of large trees, hollow logs, talus, and crevices in rock outcrops.	Unlikely-Suitable habitat is not present within the vicinity of the Project area.
<i>Corynorhinus townsendii</i> Townsend's bigeared bat	--/CSC/--	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Low-Trees throughout the project area may provide suitable roosting habitat. These habitats will be avoided by the proposed Project.
<i>Myotis yumanensis</i> Yuma myotis	--/--/--	Often found near reservoirs. Roosts in buildings, trees, mines, caves, bridges, and rock crevices. Maternity colonies active May through July.	Low-Minimal suitable roosting habitat occurs within proposed development area. Proposed development will avoid streams and water sources.
<i>Antrozous pallidus</i> pallid bat	--/CSC/--	Occurs at low elevations. Uses caves, crevices, mines, buildings, some bridges, and hollow trees for day roosts, and more open spaces for nighttime roosts. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	Low-Trees and open spaces may provide foraging and roosting habitat. These habitats will be avoided by the proposed Project.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
<i>Euderma maculatum</i> spotted bat	--/CSC/--	Roosts primarily in crevices in cliff faces. Primarily feeds on moths. Maternity colonies active April through July.	Unlikely- Suitable habitat is not present within the vicinity of the Project area.
Birds			
<i>Haliaeetus leucocephalus</i> bald eagle	FT/FPS/--	Nests in large trees with open branches along lake and river margins, usually within one mile of water.	Low- The proposed Project is south of the Sacramento River and will not affect foraging or nesting habitat near the river.
<i>Dendroica petechia brewsteri</i> yellow warbler	--/CSC	Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Medium- Some areas identified as wetland/water features in the Wetland Delineation that was prepared for the proposed Project support riparian habitat that may represent yellow warbler breeding habitat.
<i>Icteria virens</i> yellow-breasted chat	--/CSC	Riparian habitats.	Medium- Some areas identified as wetland/water features in the Wetland Delineation that was prepared for the proposed Project support riparian habitat that may represent yellow-breasted chat breeding habitat.
<i>Strix occidentalis caurina</i> northern spotted owl	FT/--	Prefers large tracts of old growth forest. Nest in cavities or platforms in large trees in nests built by other animals.	Unlikely- Suitable habitat not present within the vicinity of the project area.
<i>Pandion haliaetus</i> osprey	--/CSC/--	Builds large platform stick nests near fish-bearing water. Feeds primarily on fish in open waters of lakes, estuaries, bays, reservoirs, and within the surf zone.	Low- The proposed Project is located south of the Sacramento River and will not affect foraging or nesting habitat near the river.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
<i>Agelaius tricolor</i> tricolored blackbird	-/CSC/-	Prefers freshwater marshes dominated by cattails and bulrushes but also utilize upland and agricultural areas.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Riparia riparia</i> bank swallow	-/CT/-	Banks of rivers, creeks, lakes, and seashores; nests in excavated dirt tunnels near the top of steep banks.	Unlikely- Preferred nesting habitat is not present within the vicinity of the Project area. Some foraging opportunities may exist along the Sacramento River, but will not be impacted by the proposed Project.
Reptiles			
<i>Emys (=Clemmys) marmorata</i> northwestern pond turtle	-/CSC/-	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	Low- Some suitable habitat present within the Project area, however proposed Project will avoid the Sacramento River and most streams to minimize possible impacts to water quality, banks, beds, and surrounding aquatic vegetation.
Amphibians			
<i>Rana aurora draytonii</i> California red-legged frog	FT/CSC/-	Breeds in slow moving streams, ponds, and marshes containing emergent vegetation where there is an absence or low occurrence of predators.	Low- Some suitable habitat present within the Project area, however the proposed Project will have minor impacts wetlands and streams. Adjacent foraging habitat may be disturbed by construction activities.
<i>Rana boylei</i> foothill yellow-legged frog	-/CSC/-	Breeds in shaded stream habitats with rocky substrate, usually below 6,000 feet in elevation. Absent or infrequent when introduced predators are present.	Low- Some suitable habitat present within the project area, however the proposed Project will have minor impacts wetlands and streams. Adjacent foraging habitat may be disturbed by construction activities.
<i>Ascaphus truei</i> western tailed frog	-/CSC/-	Restricted to perennial montane streams in montane hardwood-conifer, redwood, Douglas fir and ponderosa pine habitats. Tadpoles require water below 15 degrees C.	Unlikely- Suitable habitat not present within the vicinity of the Project area.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
Fish			
<i>Hypomesus transpacificus</i> delta smelt	FT/CT/-	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisan Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	Unlikely- Suitable habitat not present within the vicinity of the Project area. BMPs will be designed to prevent downstream sedimentation.
<i>Oncorhynchus tshawytscha</i> chinook salmon, spring-run, Central Valley ESU	FT/-/-	Occurs in the Sacramento River watershed and spawns in a few select tributaries with flowing water, cool temperatures, and suitably sized cobble.	Low-The proposed Project is located south of the Sacramento River and has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Oncorhynchus tshawytscha</i> chinook salmon, winter run	FE/CE/-	This ESU enters the Sacramento River December to May; spawning peaks May to June. Upstream movement occurs more quickly than in spring run population. Young move to rearing areas in and through the Sacramento River, Delta, and San Pablo and San Francisco Bays.	Low-The proposed Project is located south of the Sacramento River and has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Acipenser medirostris</i> green sturgeon	FT/CSC/-	Spawns in the Klamath River and Sacramento River Watersheds. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Low-The proposed Project is located south of the Sacramento River and has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Oncorhynchus mykiss</i> steelhead, Central Valley ESU	FT/-/-	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	Low-The proposed Project is located south of the Sacramento River and has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
Invertebrates			
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT/-/-	Breeds and forages exclusively on elderberry shrubs (<i>Sambucus mexicana</i>) typically associated with riparian forests, riparian woodlands, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California.	Medium- Six Elderberry shrubs are present within the Project boundary and may be affected with implementation of the Fire Fuel Reduction Plan.
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/-/-	Entire life cycle in small ephemeral pools and pool basins found in grass and mud bottom swales, and basalt flow depression pools in unplowed grasslands. Lies dormant in dry pool sediments.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE/-/-	Inhabits vernal pools containing clear to highly turbid water that range from very small to very large in size. Lies dormant in dry pool sediments.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle	-/-/-	Known only from the Antioch dunes.	Unlikely- Species range is located outside of the Project area.
<i>Anthicus sacramento</i> Sacramento anthicid beetle	-/-/-	Restricted to sand dune areas of the Sacramento-San Joaquin Delta. Uses sand slip faces among bamboo and willow.	Unlikely- Species range is located outside of the Project area.
<i>Lanx patelloides</i> kneecap lanx	-/-/-	Endemic to Upper Sacramento River System. Breathe entirely through mantle, and are very sensitive to polluted water. Prefers fast, cold, well oxygenated water and cobble-boulder substrate.	Unlikely- The proposed Project is located south of the Sacramento River. BMPs will be designed to prevent downstream sedimentation.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
<i>Monadenia troglodytes</i> Shasta sideband snail	-/-/--	Associated with limestone terrain in Shasta and Siskiyou Counties.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Trilobopsis roperi</i> Shasta chaparral	-/-/--	Usually found within 100 m of lightly to deeply shaded limestone rockslides, draws, or caves with a cover of shrubs or oaks. Endemic to Shasta Co., CA.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
Vascular Plants			
<i>Orcuttia tenuis</i> slender orcutt grass	FT/CE/1B	Occurs in vernal pools. 35-1760 m in elevation. Blooms Apr-Jun.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Juncus leiospermus</i> var. <i>leiospermus</i> Red Bluff dwarf rush	-/-/1B	Occurs in chaparral, valley and foothill grassland, dismontane woodlands, and vernal pools. Elevation 35-1020 m. Blooms Mar-May.	Medium- The proposed Project will take place on or near suitable habitat. Suitable habitats outside of development area may help to minimize potential impacts. Previous rare plant surveys did not detect species (Enplan, 2006).
<i>Legenere limosa</i> legenere	-/-/1B	Occurs in vernal pools, many historical occurrences are extirpated. Found at 1-880 m elevation. Blooms Apr-Jun.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Anomobryum julaceum</i> slender silver-moss	-/-/2.2	Broadleaved upland forest, lower montane coniferous forest, north coast coniferous forest. Moss which grows on damp rocks and soil; usually seen on roadcuts. 100-1000 m.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Carex scoparia</i> pointed broom sedge	-/-/2.2	Wet, open places in Great Basin scrubs. Found at elevations 130-1000 m and blooms in May.	Unlikely- Suitable habitat not present within the vicinity of the Project area.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to impact
<i>Carex vulpinoidea</i> fox sedge	--/--/2.2	Perennial herb occurring in freshwater marshes and swamps, and in riparian woodland. Found at elevations 30-1200 m and blooms May-June.	Low -The proposed Project has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Castilleja rubicundula</i> ssp. <i>rubicundula</i> pink creamsacs	--/--/1B	Annual herb occurring in open areas of chaparral, in cismontane woodland, in meadows and seeps, and on serpentine substrate in valley and foothill grassland. Found at 20-900 m elevation. Blooms April-June.	Medium -The proposed Project will take place on or near suitable habitat. Some suitable habitat within or in the vicinity of the Project area that will not be disturbed by development. Previous rare plant surveys did not detect species (Enplan, 2006).
<i>Clarkia borealis</i> ssp. <i>borealis</i> northern clarkia	--/--/1B	Chaparral, cismontane woodlands, and lower montane coniferous forests. 400-1340 m. Blooms June-Sept.	Medium -The proposed Project will occur on or near suitable habitat. Adjacent suitable habitats not affected by the proposed Project may support some individuals. Previous rare plant surveys did not detect species (Enplan, 2006).
<i>Cryptantha crinita</i> silky cryptantha	--/--/1B	In gravelly stream beds within cismontane woodlands, valley foothill grasslands, lower montane coniferous forests, riparian forests, and riparian woodlands. Found at 85-1215 m elevation. Blooms April-May.	Low -The proposed Project has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Lathyrus sulphureus</i> var. <i>argillaceus</i> dubious pea	--/--/3	Perennial herb occurring in cismontane woodland and lower and upper montane coniferous forest. Found at 150-305 m elevation. Blooms in April.	Unlikely -Species does not occur within Project area.
<i>Potamogeton</i> <i>epiphydrus</i> ssp. <i>nuttallii</i> Nuttall's pondweed	--/--/2.2	Shallow water, ponds, lakes, streams, irrigation ditches. 400-2110 m. Blooms July-August.	Low -Proposed development will not occur near most streams within the Project area.



TABLE 5.7-4 (Continued)
 Potentially Impacted Special-Status Species in the Project Area

Scientific Name Common Name	Listing Status USFWS/ CDFG/CNPS	General Habitat	Potential for Project to Impact
<i>Sagittaria sanfordii</i> Sanford's arrowhead	--/1B	Found in assorted freshwater habitats including marshes, swamps and seasonal drainages at 0-650 m in elevation. Blooms May-Oct.	Unlikely-The proposed Project has been designed to minimize impacts to streams and impacts to water quality. BMPs will be designed to prevent downstream sedimentation.
<i>Sedum paradisum</i> Canyon Creek stonecrop	--/1B	Rock faces, in crevices of exposed granite. 1060-1860 m elevation. Blooms May-June.	Unlikely- Suitable habitat not present within the vicinity of the Project area.
<i>Agrostis hendersonii</i> Henderson's bent grass	--/3.2	Annual herb occurring in valley and foothill grassland in mesic areas, and in vernal pools. 70-305 m elevation. Blooms Apr-May.	Unlikely- Suitable habitat not present within the vicinity of the Project area.

Source: CDFG 2007, CNPS 2007, USFWS 2007, *Biological Resources Report*, ESA, April 2009.

Notes:

- Federal (U.S. Fish and Wildlife Service):
- FE = Listed as Endangered by the Federal Government
- FT = Listed as Threatened by the Federal Government
- FC = Candidate for Federal Listing
- State (California Department of Fish and Game):
- CE = Listed as Endangered by the State of California
- CT = Listed as Threatened by the State of California
- CSC = California species of special concern
- FPS = California Fully protected bird species
- California Native Plant Society (CNPS):
- List 1B = Plants rare, threatened, or endangered in California and elsewhere
- List 2 = Plants rare, threatened, or endangered in California but more common elsewhere
- List 3 = Plants about which more information is needed
- CNPS Code Extensions

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



5.7.4 REGULATORY FRAMEWORK

This section summarizes the federal and state regulations that protect special-status species, “waters of the U.S.,” and wetland habitats. This section also discusses pertinent City of Redding plans, ordinances, and policies relating to the protection and preservation of biological resources.

FEDERAL REGULATIONS

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) generally prohibits the “taking” of a species listed as endangered or threatened (16 USC 1532, 50 CFR 17.3). Under the FESA, the “take” of a threatened or endangered species is deemed to occur when an intentional or negligent act or omission results in any of the following actions: “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The term “harm” includes acts that result in death or injury to wildlife. Such acts may include significant habitat modification or degradation if it results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. For projects with a federal nexus, Section 7 of the FESA requires that federal agencies, in consultation with USFWS or NOAA Fisheries, use their authorities to further the purpose of FESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 10(a)(1)(B) allows non-federal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS or NOAA Fisheries.

Critical habitat is defined in Section 3(5)(A) of the FESA as “(i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the FESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.” Section 3(3) of the FESA defines “conservation” as “to use and the use of all methods and procedures which are necessary to bring an endangered species or threatened species to the point at which the measures provided pursuant to the FESA are no longer necessary” (i.e., the species is recovered and removed from the list of endangered and threatened species). The designation of critical habitat directly affects only federal agencies, by prohibiting actions they fund, authorize, or carry out from destroying or adversely modifying critical habitat. Individuals, businesses, and other non-federal entities are not affected by the designation of critical habitat so long as their actions do not require a permit, a license, funding, or other support from a federal agency.

Federal Migratory Bird Treaty

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA is administered by the USFWS and special permits from the agency are generally required for the “take” of any migratory birds.



Federal Magnuson-Stevens Fishery Conservation and Management Act

The Federal Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a federal fisheries management plan (FMP). The MSA requires federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agencies that may adversely affect EFH (MSA section 305[b][2]). A component of this consultation process is the preparation and submittal of an Essential Fish Habitat Assessment (EFHA). The length of the EFHA will vary, based on project complexity and the magnitude of potential impacts on EFH, but all EFHAs must include the following information: (1) a description of the proposed action; (2) an analysis of the effects, including cumulative effects, of the proposed action on EFH, the managed species, and associated species, such as major prey species, including affected life history stages; (3) the federal agency's views regarding the effects of the proposed action on EFH; and (4) proposed mitigation, if applicable. In instances where MSA and FESA issues overlap, NOAA Fisheries encourages an integrated approach to consultation. The EFH mandate applies to all species managed under an FMP. For the Pacific coast (excluding Alaska), there are three FMPs covering groundfish, coastal pelagic species, and Pacific salmon.

STATE REGULATIONS

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). The CDFG also maintains a list of "candidate species," which are species that the CDFG formally notices as being under review for addition to the list of endangered or threatened species. In addition, CDFG maintains lists of "species of special concern," which serve as species "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and, if so, whether the proposed project would have a potentially significant impact on any of these species. In addition, the CDFG encourages informal consultation on any proposed project that may affect a species that is a candidate for state listing. "Take" of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code of California. Authorization from the CDFG would be in the form of an Incidental Take Permit.

California Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered, as defined by the CDFG. An exception to this prohibition allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFG and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish and Game Code §1913 exempts from the "take" prohibition "the removal of endangered or rare native plants from a channel, lateral ditch, building site, or road, or other right of way".



California Fish and Game Code

Raptor species (birds of prey) are protected for "take" according to California Fish and Game Code (§3503.5, 1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. California statutes also accord "fully protected" status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be "taken," even with an Incidental Take permit (California Fish and Game Code, Sections 3505, 3511, 4700, 5050, and 5515).

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, State *CEQA Guidelines* §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or the CDFG (e.g., candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

REGULATION OF ACTIVITIES IN WATERS OF THE U.S. AND WETLANDS

Federal Regulation

The Corps has primary federal responsibility for administering regulations that concern "waters of the U.S.," including jurisdictional wetlands. The Corps acts under two statutory authorities, the Rivers and Harbors Act (Sections 9 and 10) which governs specified activities in "navigable waters of the U.S.," and the Clean Water Act (Section 404), which governs specified activities in "other waters of the U.S." and many wetland habitats. The Corps requires that a permit be obtained if a project proposes placing structures within, over, or under navigable waters and/or discharging dredged or fill material into "waters of the U.S." below the ordinary high-water mark in non-tidal waters. The Environmental Protection Agency (EPA), USFWS, the National Marine Fisheries Services (NMFS), and several other agencies provide comment on Corps permit applications. On agricultural lands, the Natural Resources Conservation Service (NRCS) is the primary federal agency charged with determining the boundary of jurisdictional wetlands for implementation of the Food Securities Act, however, the Corps retains primary permitting authority.

State Regulation

The state's authority in regulating activities in "waters of the U.S." and wetlands resides primarily with the CDFG and the State Water Resources Control Board (SWRCB). The CDFG provides comment on Corps permit actions under the Fish and Wildlife Coordination Act. The CDFG is also authorized under the California Fish and Game Code to develop mitigation measures and enter into Streambed Alteration Agreements with applicants who propose projects that would obstruct the flow of, or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams. The SWRCB, acting through the Regional Water Quality Control Board (RWQCB), must certify



that a Corps permit action meets state water quality objectives. The RWQCB also regulates the discharge of dredged or fill material into drainages and wetlands that are not subject to Corps jurisdiction (e.g. isolated waters).

CITY OF REDDING

City of Redding Municipal Code - Tree Management

The City of Redding's *Tree Management Ordinance* was developed based on the following objectives: "1) protect and enhance the aesthetic qualities of the community provided by native and nonnative trees; 2) promote a healthy and attractive urban landscape as the community grows; 3) recognize the importance of trees as a visual and physical buffer; 4) preserve the City's valuable natural features; 5) require the replacement of trees that are removed, where appropriate; 6) establish a program for the planting of trees in new developments; 7) protect trees on undeveloped properties until such time as a development plan/building permit is approved." In order to accomplish the preservation purposes of the *Tree Management Ordinance*, candidate trees, as defined in RMC Chapter §18.61, are afforded special protections. The regulations require that a tree removal permit be obtained for removal of trees on vacant/undeveloped lands in order to ensure that trees can be identified and considered as candidates for preservation during the development process (Ordinance 2369 §1 (part), 2006).

Subdivision and Other Development Projects

The City of Redding requires that subdivisions and other development projects be designed to minimize destruction or damage to trees that exceeds 6 inches in diameter at a height of 4.5 feet above the ground. The City requires that a Tree Management Plan be submitted with development permits for discretionary projects or when a tree is proposed to be removed, when a discretionary permit is not required. The Tree Management Plan must contain all the elements required by RMC §18.45.050 and §18.45.070.

To achieve the goal of preservation, the Planning Commission may consider tree preservation as adequate grounds to approve variances associated with building setbacks, building separations, parking requirements and driveway grades if the Commission determines that: (1) the preservation and retention of a candidate tree outweighs the disadvantages associated with any variance granted to save it, and (2) there is a real expectation that the tree will survive for more than 5 years (Ordinance 2369 §1 (part), 2006).

As allowed in the current ordinance, tree removal may be granted where set aside areas and open space easements will be provided. The proposed Project sets aside approximately 142.8 acres of open space easement.

River/Creek Corridor Development Ordinance

River and creek corridor habitats support a great diversity of plants and animals, recharge aquifers and filter some pollutants. These corridors are valuable as open-space areas and are of recreational and scenic interest. The purpose of the City of Redding ordinances for corridor protection is to provide adequate buffer areas between creek corridors and adjacent development to protect this valuable community resource as a natural, scenic and recreational amenity (Ordinance 2343 §2 (part), 2005; Ordinance 2310 §3, 2003; Ordinance 2301 §3 [Att. A (part)], 2002). RMC Chapter 18.48 directly relates to the proposed Project:



Chapter 18.48: The provisions of this chapter apply directly to Salt Creek and any of its adjoining waterways identified for protection in the General Plan. The buffer zone for Salt Creek is 25 feet of riparian habitat and 50 feet from the top of the bank as diagramed in Figure 3.3 of the Natural Resources Element of the City of Redding's General Plan. "No structure, parking access, parking space, paved area, fence, swimming pool, structure or other improvements shall be constructed within a buffer area except the installation of approved public facility infrastructure." The buffer area shall remain in a natural state and shall not be landscaped. Where drainage devices or improvements are desired, they shall be placed in inconspicuous locations and constructed from earth-toned concrete, rock, and/or native vegetation.

City of Redding General Plan

The *General Plan* considers riparian, vernal pools, aquatic, and wetland habitats sensitive, thus requiring special consideration when developing within or in proximity to them. These habitats support a variety of both plant and animal species, some of which are classified as special status species. Figure 3-3 (River and Creek Corridor Buffer Widths) of the *General Plan* establishes minimum river and creek corridor development setbacks (buffer areas). According to Figure 3-3, Salt Creek is identified as a Secondary Tributary. Therefore, a 25-foot development setback from the riparian dripline (or 50 feet from the bank, whichever is greater) is required for land area along these corridors. According to the Natural Resources Element, these buffer areas should be dedicated or a permanent conservation easement granted to the City as a condition of development approval.

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects on biological resources. Applicable goals relative to the proposed Project site within these elements are listed in Table 5.7-5, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR BIOLOGICAL RESOURCES, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.



**TABLE 5.7-5
Consistency Analysis with City of Redding General Plan
Goals and Policies for Biological Resources**

General Plan Goals, Policies, and Objectives	Analysis
<u>Community Development and Design Element</u>	
Goal CDD3: Ensure a proper balance between development areas and the natural environment.	
Policy CDD3A: Prohibit development in natural floodplains or on hillsides with slope areas exceeding 20 percent. Minor encroachments into these areas for new developments may be authorized without a General Plan amendment if necessary to facilitate installation of infrastructure, provide emergency-access opportunities, or otherwise facilitate construction of the project as approved by the City. (See Policy NR10A). Where an entire site designated for residential use is subject to flooding or has slopes over 20 percent, a density of 1.0 dwelling unit per 20 acres may be permitted by use permit subject to appropriate standards.	The Project is not located within a natural floodplain or flood zone. Project development will largely avoid grading within areas equal to or greater than 20 percent slopes. However, grading necessary to provide appropriate access to many of the out parcels, would require grading within slope areas greater than 20 percent protected by Policy CDD3A. MM 5.1-2 (Section 5.1, LAND USE AND RELEVANT PLANNING) would require the Project Applicant to redesign the site plan or eliminate those out parcels that require grading within the slope protection areas established by Policy CDD3A.
Policy CDD3B: Require buffer areas between development projects and significant watercourse, riparian vegetation, and wetlands in accordance to the Natural Resources Element.	In accordance with <i>General Plan</i> policies, intermittent drainages and associated buffers shall be left as open space.
Policy CDD3C: Preserve natural corridors and linkages between habitat types through project design, key open-space acquisitions, floodplain and slope dedications and easements, and similar mechanisms.	The proposed Project is in compliance with RMC Chapter 18.48 (River/Creek Corridor Development) regarding the provision of adequate buffer areas between creek corridors and adjacent development. Compliance with RMC requirements and <i>General Plan</i> policies would reduce potential impacts.
<u>Natural Resources Element</u>	
Goal NR5: Preserve and protect the significant habitat, plants, and wildlife that exist in the planning area.	
Policy NR5A: Minimize the disruption of sensitive habitat caused by new development by encouraging innovative design and site planning and establishing performance standards for habitat protection.	The proposed Project will minimize sensitive habitat disruption to the extent feasible.
Policy NR5B: Work to preserve and enhance fisheries in the Sacramento River and other identified streams.	Implementation of MM 5.11-1b in Section 5.11, HYDROLOGY AND WATER QUALITY, requires the Project Applicant to implement BMP's to avoid and/or minimize erosion and sedimentation impacts associated with the Salt Creek and Gold Run Creek, which are tributaries to the Sacramento River.



TABLE 5.7-5 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Biological Resources

General Plan Goals, Policies, and Objectives	Analysis
<p>Goal NR6: Preserve watercourses, vernal pools, riparian habitat, and wetlands in their natural state to the extent feasible. Fully mitigate unavoidable adverse impacts such as wetlands filling or disturbance.</p>	<p>The Project Applicant will strive to avoid impacts to wetlands as the first course of mitigation; any unavoidable loss of jurisdictional waters and riparian habitat will require some form of compensatory mitigation. Refer to MM 5.7-1a.</p>
<p>Policy NR6A: Preserve watercourses, vernal pools, riparian habitat, and wetlands in their natural state to the extent feasible. Fully mitigate unavoidable adverse impacts such as wetland filling or disturbance</p>	<p>Buffers are planned as part of the proposed Project, in order to minimize impact to sensitive habitats.</p>
<p>Policy NR6B: Provide adequate buffering of sensitive habitats whenever necessary. Buffer size should be based upon the type of habitat as well as its size and habitat value</p>	<p>The Project Applicant shall implement BMP's and prepare a Storm Water Pollution Prevention Plan (SWPPP's), as required, to avoid and/or minimize erosion and sedimentation impacts associated with Salt Creek and Gold Run Creek. In addition, Salt Creek is designated as a "Secondary Tributary" in the <i>General Plan</i>, meaning that a 25 foot development setback from riparian dripline or 50 foot setback from bank, whichever is greater, is required.</p>
<p>Policy NR6C: Ensure that uses allowed within riparian corridors:</p> <ul style="list-style-type: none"> • Minimize the creation of erosion, sedimentation, and increased runoff; • Emphasize retention and enhancement of natural riparian vegetation; • Provide for unimpaired passage of fish and wildlife; • Avoid activities or development of new features that result in disturbance or dispersal of wildlife; • Avoid channelization; • Avoid substantial interference with surface and subsurface flows; • Incorporate natural vegetation buffers. 	<p>The proposed Project has the potential to impact a number of special status-species and their associated habitats. Implementation of MM 5.7-1 through 5.7-2 would reduce these impacts to less than significant levels and provide consistency with the <i>General Plan</i> policies.</p>
<p>Policy NR6E: Strive to conserve all "special status species" within the Planning Area. Ensure implementation of statutory protection for these species.</p>	<p>The proposed Project would result in the loss of oak woodland, as well as oak trees subject to protection under the City's <i>Tree Management Ordinance</i>. The proposed Project is to designate the approximately 142.8 acres of oak woodland habitat avoided as "Greenway" reserve, which could be managed for its recreational opportunities, wildlife habitat opportunities and fuels management. In addition, 20 tree retention groups and 8 individual specimen trees have been identified for preservation. The Project Applicant also proposes tree planting within the neighborhoods, per City of Redding standards. The plantings would occur mainly in common areas, along streets, in front yards and within the 13.9-acre neighborhood park.</p>
<p>Goal NR7: Recognize the aesthetic and biological values of oak woodlands and other natural vegetation.</p> <p>Policy NR7A: Promote existing native oaks, especially valley oaks, by establishing standards for the design of development projects. The preservation of stands of trees within developments is preferred over preservation of individual trees, with the exception of special-status species and heritage trees.</p>	<p>The proposed Project would result in the loss of oak woodland, as well as oak trees subject to protection under the City's <i>Tree Management Ordinance</i>. The proposed Project is to designate the approximately 142.8 acres of oak woodland habitat avoided as "Greenway" reserve, which could be managed for its recreational opportunities, wildlife habitat opportunities and fuels management. In addition, 20 tree retention groups and 8 individual specimen trees have been identified for preservation. The Project Applicant also proposes tree planting within the neighborhoods, per City of Redding standards. The plantings would occur mainly in common areas, along streets, in front yards and within the 13.9-acre neighborhood park.</p>



TABLE 5.7-5 (Continued)
Consistency Analysis with City of Redding General Plan
Goals and Policies for Biological Resources

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Policy NR7B:</i> Identify and establish appropriate "tree mitigation areas" to be used for the planting of native trees in concert with development project mitigation.</p>	<p>Refer to consistency analysis above.</p>
<p><i>Goal NR8:</i> Recognize and protect habitat linkages and migratory corridors.</p>	
<p><i>Policy NR8A:</i> Maintain, where possible, the habitat linkages/wildlife corridors and sensitive habitats that are created by the open-space ("Greenway") network established by the General Plan. Require development in areas depicted as "Greenway" on the General Plan Diagram to consider corridor impacts and, where necessary, provide alternate usable links between habitat types or areas and/or provide alternate development plans that avoid the open-space network and sensitive habitats.</p>	<p>The proposed Project is in compliance with RMC Chapter 18.48 (River/Creek Corridor Development) regarding the provision of adequate buffer areas between creek corridors and adjacent development, and <i>General Plan</i> Policy NR8A regarding the maintenance of habitat linkages/wildlife corridors by a greenway network. The proposed Project is to designate the approximately 142.8 acres of oak woodland habitat avoided as "Greenway" reserve, which could be managed for its recreational opportunities, wildlife habitat opportunities and fuels management. Compliance with RMC requirements and <i>General Plan</i> policies would reduce potential impacts.</p>
<p><i>Goal NR9:</i> Promote and facilitate habitat preservation, restoration, and enhancement.</p>	
<p><i>Goal NR10:</i> Preserve areas containing excessive slopes or 100-year floodplains as open space to prevent loss of life and property damage and to provide valuable habitat and recreational opportunities.</p>	
<p><i>Policy NR10A:</i> Require as a condition of development approval public dedication (in fee) of flood-prone lands adjacent to the Sacramento River and those tributary streams identified on Figure 3-3. Exceptions to this policy may be based on: (1) the provisions of any adopted specific plan or (2) approval by the City in consideration of special circumstances unique to a flood-prone area where the extent of flooding is largely dictated by inadequate drainage improvements, where an entire parcel is constrained by floodplain, and/or where the flooding occurs within a developed area.</p>	<p>Salt Creek is identified as a Secondary Tributary stream in Figure 3-3 of the <i>General Plan</i>. As part of Project approval, the City will make a determination whether as to these lands will be publicly dedicated as open space.</p>

Source: *City of Redding General Plan*, 2000.



5.7.5 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

The criteria for determining significant impacts on biological resources were developed in accordance with the State *CEQA Guidelines*. Appendix G of the State *CEQA Guidelines* contains the Initial Study Environmental Checklist Form, which includes questions relating to biological resources. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS);
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT).

MANDATORY FINDINGS

Section 15065(a), *Mandatory Findings of Significance*, of the State *CEQA Guidelines* states that a project may have a significant effect on the environment if "...the project has the potential to substantially degrade the quality of the environment, 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, reduce the number or restrict the range of an endangered, rare or threatened species...".

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would substantially diminish, or result in the loss of, an important biological resource or those that would obviously conflict with local, state or federal resource conservation plans, or regulations. Impacts are



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

RARE OR ENDANGERED SPECIES

Section 15380 of the State *CEQA Guidelines* indicates that a lead agency can consider a non-listed species to be Rare or Endangered for the purposes of CEQA if the species can be shown to meet the criteria in the definition of Rare or Endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered according to the definitions for Rare and Endangered listed in §15380 of CEQA, and mitigation measures are recommended where appropriate.

5.7.6 IMPACTS

Biological resources impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SPECIAL-STATUS BIOLOGICAL RESOURCES

5.7-1 ***IMPLEMENTATION OF THE PROPOSED PROJECT MAY ADVERSELY IMPACT SPECIAL-STATUS BIOLOGICAL RESOURCES.***

Impact Analysis: The analysis presented below describes potential impacts to listed and special status species potentially occurring in the proposed Project area.

SPECIAL-STATUS FISH SPECIES HABITAT

Salt Creek is connected to the Sacramento River and is listed as Critical Habitat for Central Valley steelhead (*Oncorhynchus mykiss*, a federally threatened anadromous fish species) in the CNDDB. During the July 22, 2008 field investigation, several juvenile steelhead were observed in a section of Gold Run Creek immediately north of the proposed Project, just beyond the Project boundary. The presence of steelhead indicates the potential for other anadromous fish, such as Sacramento River Chinook salmon (*Oncorhynchus tshawytscha*), to also occur with Gold Run Creek, although Critical Habitat for Chinook salmon is not designated in Gold Run Creek.

Salt Creek is proposed to be avoided by all Project activities. However, Gold Run Creek is proposed to have an access road crossing that may impact these anadromous salmonids. Steelhead are more likely to utilize these small tributary streams, in comparison to the various races of Chinook salmon. Neither winter-run nor spring-run chinook salmon would use Gold Run Creek, although fall-run chinook salmon may potentially utilize Gold Run Creek during wet seasons. Spring-run chinook salmon require larger rivers than Gold Run Creek, and require adult holding habitat in the form of deep pools. Such habitat is not present in Gold Run Creek, and therefore spring-run chinook salmon are also not likely to utilize Gold Run Creek. Thus, the only chinook salmon that may potentially utilize Gold Run Creek is the fall-run, which is not currently federally-listed.



Any construction activities within Salt Creek, Gold Run Creek, and their intermittent tributaries may result in direct impacts to listed fish species. Although no grading activities would occur within 200 feet of Salt Creek, development of Phase 1 of the Project would impact approximately 0.04 acres of the upper reach of Gold Run Creek, including its intermittent tributary as a result of the extension of Buenaventura Boulevard. This may result in disturbance, harassment, injury, or mortality to migrating adult and rearing juvenile steelhead and salmon and is considered a potentially significant impact unless mitigated. Implementation of MM 5.7-1a and MM 5.7-1b would serve to reduce impacts to less than significant levels.

Erosion / Sedimentation Effects

Construction associated with build-out of the proposed Project would require vegetation removal, earthwork, and surface grading of soil that would expose unprotected soils to runoff erosion during rain storms, increasing the potential for sediment to enter Salt Creek and Gold Run Creek. In addition, sedimentation of in-stream gravels could significantly change the composition and abundance of aquatic invertebrate populations, thus impacting food availability for salmonids. Further, any juvenile steelhead or salmon rearing in the area during a runoff event from a construction site may be temporarily displaced or their social behavior may be temporarily disrupted by increased runoff turbidity. Erosion and associated sedimentation effects to anadromous fisheries would be considered potentially significant.

Any potential Project-related effect, including stream sedimentation from surface erosion, surface water runoff, increased stream water temperature from riparian modification, or a number of other potential actions, would require assessment of "take" by the National Marine Fisheries Service (NMFS) under the National Oceanic & Atmospheric Administration (NOAA).

Upon receipt of a federal permit application, the Corps may request formal consultation with the NMFS under NOAA pursuant to Section 7 of the ESA. This consultation can be requested by the Corps to address potential impacts to listed salmonids and Critical Habitat, as well as discussions pertaining to buffer the proposed distances. Consultation with the CDFG is also required to comply with the California Endangered Species Act (CESA). Refer to MM 5.7-1a.

Requirements and limits on construction to protect listed fish species may be contained in a Biological Opinion issued under Section 7 of the Endangered Species Act, as conditions of the Corps permit, and/or as conditions imposed under the NPDES permit issued by the Regional Water Quality Control Board. In addition to mitigation measures outlined in Section 5.11, HYDROLOGY AND WATER QUALITY, compliance with the regulatory requirements and recommended mitigation would reduce impacts to the Steelhead trout species to a less than significant level.

SPECIAL-STATUS BIRDS, RAPTOR SPECIES, AND MIGRATORY BIRDS

Although no evidence of nesting raptors was observed during the biological evaluation, oak woodland habitats on the proposed Project site are considered suitable nesting habitat for special-status bird and raptor species including red-tailed hawk, sharp-shinned hawk, and Cooper's hawk, yellow warbler, and yellow-breasted chat. In addition, raptors and migratory birds other than those listed as special-status species may nest within the proposed Project site. All raptors (owls, hawks, eagles, falcons) including common species and their nests, are protected from "take" pursuant to the Fish and Game Code of California §3503.5, and the federal Migratory Bird Treaty Act, among other federal and state regulations.



The proposed Project would result in the removal of vegetation that provides suitable nesting habitat. Removal of this vegetation during the nesting season (approximately April to July) has a potential to adversely impact these species. In addition, construction activities (e.g. noise, vibration, human presence) in the vicinity of active nest sites may adversely affect nesting activity. Special-status birds are designated by the USFWS and/or the CDFG as species of special concern, nesting raptor species as protected from take by the California Fish and Game Code, and nesting migratory birds are protected by the federal Migratory Bird Treaty Act. Impacts to active nests of special-status birds, raptors, and migratory birds would be less than significant with the implementation of MM 5.7-1c.

SPECIAL-STATUS / RARE PLANT SPECIES

Elderberry Shrubs

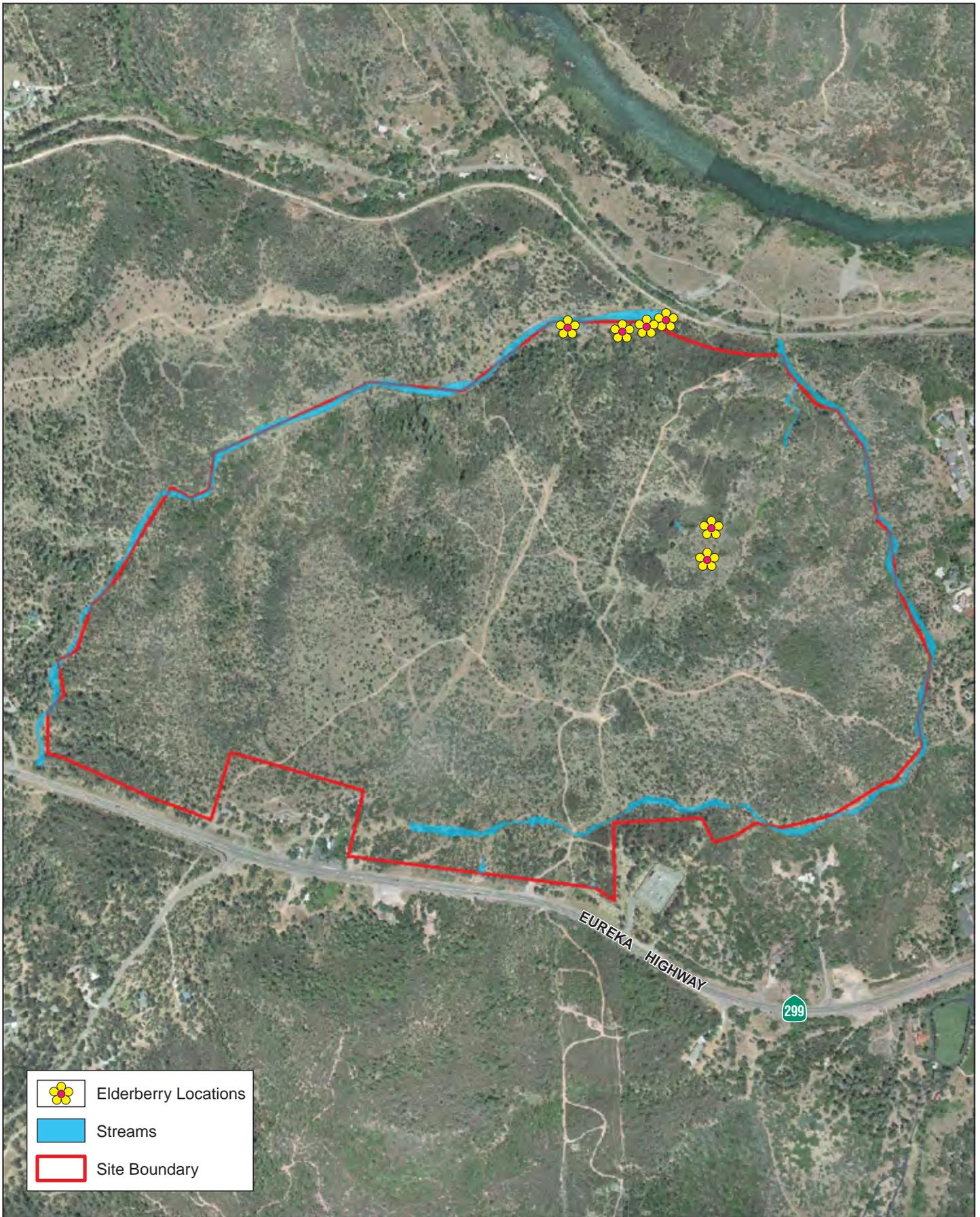
Elderberry shrubs are the sole host plant for the federally threatened Valley Elderberry Longhorn Beetle (VELB) (*Desmocerus californicus dimorphus*), and stems one inch or greater in diameter at ground level are required for the beetle to complete its life cycle. Exit holes are frequently the only evidence that a particular elderberry shrub has been utilized by the beetle. However, larval galleries can be found in elderberry stems with no evidence of exit holes. According to the *Biological Resources Report* prepared for the proposed Project, eight blue elderberry shrubs (*Sambucus mexicanus*) clustered in two locations within the Project site were identified, generally located along the northern limits of the Project adjacent to Salt Creek (refer to Figure 5.7-3, ELDERBERRY LOCATIONS).

The Project has been designed to avoid direct and indirect impacts to the VELB. The USFWS describes direct and indirect impacts as activities occurring within 20 feet and 100 feet, respectively, of the dripline of elderberry shrubs meeting the definition of VELB habitat. Based on the preliminary grading plans, construction activities would occur approximately 200 feet from the closest shrub. As Project construction activities would not encroach within 20 feet or 100 feet of the elderberry shrubs, neither direct or indirect impacts are anticipated to occur. In order to provide additional protection to the existing elderberry shrubs, MM 5.7-1d would be implemented during construction activities to reduce impacts to less than significant levels.

Special Status Plant Species

Several special status plant species with the potential to occur within the footprint of the proposed Project have been identified: Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*), pink creamsacs (*Castilleja rubicundula* ssp. *rubicundula*), and northern clarkia (*Clarkia borealis* ssp. *borealis*). The Red Bluff dwarf rush is typically associated with vernal pool habitat and such habitat is not present on-site. This plant was not encountered during plant surveys conducted in 2006.

The pink creamsacs and northern clarkia were also previously surveyed in 2006 and determined to be absent from the Project site. However, as the proposed Project would occur on or adjacent to suitable habitat, MM 5.7-1e would be implemented to avoid impacts to these two species.



Source: ENPLAN, 10/2/08.
 Note: Feature and boundary locations depicted are approximate only.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Elderberry Locations

Figure 5.7-3



OAK WOODLAND

The construction of the proposed Project and transportation network would result in the removal and/or impact of approximately 30.60 acres of vegetation classified as blue oak woodland and 80.35 acres as mixed chaparral. Approximately 80 percent of the existing woodlands on the proposed Project site will be preserved.

Where the development is proposed there is very sparse tree canopy coverage (approximately 13 percent), a brush canopy of approximately 57 percent, and very few individual trees greater than 12 inches DBH. The more open canopy condition within the area of impact contrasts with the unaffected area which has an average tree canopy of 30 percent and brush canopy of 55 percent. The majority of trees impacted by the proposed Project are Blue oaks with an average DBH of nine inches and an average height of 22 feet. The average condition of the trees affected are 65 percent "good"; 25 percent "fair"; and 10 percent "poor".

The Project design provides for avoidance of the majority of the Blue oak trees through the use of clustering of the homes. This clustering, where the Blue oak tree canopy is sparse, minimizes the removal of individual oak trees while maintaining the continuity of existing oak woodland stands, including the avoidance of impacts to areas near watercourses that contain riparian habitat. The retained oak woodland stands, which are on the steeper slopes leading to the streams, have a greater mix of tree species than the impacted areas. The size and configuration of the retained Blue oak woodlands will provide corridors of habitat that will reduce the potential effects of habitat fragmentation and provide migration corridors to other undeveloped areas adjacent to the Project.

Approximately 142.8 acres of oak woodland habitat is avoided as "Greenway" reserve, which could be managed for its passive recreational opportunities, wildlife habitat opportunities and fuels management. In addition, 20 tree retention groups and 8 individual specimen trees have been identified for preservation. These retained groups and individual trees will preserve 69 percent or 61 of the 89 trees larger than 14" DBH in these areas (refer to Appendix 15.6, BIOLOGICAL RESOURCES ASSESSMENTS). The Project Applicant also proposes tree planting within the neighborhoods, per RMC Chapter 18.45, that are created as part of the proposed Project. The trees will be planted for their aesthetics, to moderate temperatures, and provide forage and habitat for wildlife. The plantings would occur mainly in common areas, along streets, in front yards and within the proposed neighborhood park.

In general, Blue oak woodlands are moderately valuable as wildlife habitat and is not a protected habitat within California cities. Other than potentially nesting birds, the habitat has not been identified as sustaining listed fauna. The City's *General Plan EIR* acknowledges that the preservation of native trees will sometimes conflict with normal land development and that implementation of the *General Plan* will result in the disturbance of approximately 11,400 acres of Blue oak/foothill pine habitat. However, the *General Plan* further acknowledges that over 7,000 acres of open space is created under the Plan, much of which contains oak habitat.

As noted above, the proposed Project places 142.8 acres of the more healthy habitat of the site in open space preserving a substantial amount of oak woodlands. The open spaces areas primarily occur along and adjacent to water courses as opposed to the disturbed plateau. As described above, a survey for candidate trees has been completed and certain distinctive trees have been identified for protection in accordance with §18.45.070 of the *Tree Management Ordinance* and Chapter 18.61 of the *Zoning Ordinance*. Impacts related to Blue oak habitat would be less than significant and no mitigation is required.



NORTHWESTERN POND TURTLE

Although the potential for the northwestern pond turtle to occur on-site is low, Salt Creek and Gold Run Creek could serve as movement corridors for the northwestern pond turtle. Although these creeks will not be directly impacted by development of the proposed Project, some impacts to these water features may occur as result of construction activities associated with support infrastructure such as road crossings, utility lines, etc. If workers drive vehicles or other heavy equipment within potential pond turtle habitat, individuals of the species could be directly impacted. Pond turtles may also be impacted indirectly if construction results in degradation of aquatic habitat and water quality by increased erosion and sedimentation, or accidental fuel leaks/spills. The northwestern pond turtle is designated as a species of special concern by the USFWS and CDFG and any impacts to the species would be potentially significant. MM 5.7-1f provides for pre-construction monitoring and, if necessary, corrective measures to ensure harm would not occur.

CALIFORNIA RED-LEGGED FROG AND FOOTHILL YELLOW-LEGGED FROG

Some suitable habitat present within the Project area for both the California red-legged frog and Foothill yellow-legged frog. Although implementation of the proposed Project would have minor impacts wetlands and streams, adjacent foraging habitat may be disturbed by construction activities. The California red-legged frog is designated as federally threatened by the USFWS and a species of special concern by the CDFG. The Foothill yellow-legged frog is designated as a species of special concern by the CDFG. Any impacts to these species would be potentially significant. MM 5.7-1g provides for pre-construction monitoring and, if necessary, corrective measures to ensure harm would not occur.

FIRE FUEL REDUCTION PLAN

Fuels management activities are proposed for the Project to protect residences and structures from wildfire and include shrubs and small trees. The proposed fuels reduction activities would occur within 200 feet of all structures proposed for the site. It is anticipated that fuels would be reduced through both mechanized and non-mechanized (hand) treatments. Mechanized treatment may take the form of a tracked excavator with a brush masticator attachment. Hand treatment would be completed by chainsaw and chipper. The proposed fuel management activities are divided into the following two treatment zones:

- **ZONE 1:** This zone shall include the area on-site within 100 feet of a building site that abuts natural open space. Within Zone 1, 80 to 90 percent of the existing brush (manzanita, ceanothus, etc.) shall be removed. Trees shall be saved except where approved to support development otherwise. Trees shall be limbed up to 8 feet.
- **ZONE 2:** This zone shall include a 100-foot-wide band parallel and immediately adjacent to the Zone 1 clearance area where located on-site. Within Zone 2, vegetation shall be reduced so that 50 percent of brush is cleared and trees are limbed up to 8 feet. Where crown closure of existing vegetation is already 50 percent or less, only ground level fuels will be reduced.

Proposed treatment areas are depicted in Figure 5.2-1, FUEL REDUCTION MANAGEMENT PLAN, in Section 5.2, PUBLIC HEALTH AND SAFETY. These areas are generalized and may be adjusted slightly to accommodate the final dimensions and placement of structures. In addition, certain restrictions have been placed upon the prescriptions to protect water quality and riparian habitat. These include buffers surrounding Salt Creek and other jurisdictional features on the Project site. The buffer recommended for Salt Creek is



greater than the setback requirements established in RMC Chapter 18.48 because of the local steepness of slopes in the area. This larger buffer along Salt Creek would help insure that this feature is not adversely affected by sediment discharges or reductions in riparian habitat. The following fire fuel reduction restrictions have been established for the proposed Project:

- No vegetation removal or very selective removal (as required by the Fire Marshal) shall occur within the City stream corridor setback requirement from Salt Creek (i.e., 50 feet from the riparian edge or 100 feet from top of bank, whichever is greater).
- No vegetation removal or very selective removal (as required by the Fire Marshal) shall occur within 25 feet of the ordinary high water mark of any jurisdictional feature.

Should it be determined that selective removal is required within these buffer areas for fire protection, all vegetation trimming and removal shall be performed by using hand tools to prevent additional damage to riparian vegetation and soils compaction from the use of heavy equipment or vehicles.

Based on these conditions, the proposed fuel reduction activities would affect approximately 91.3 acres of upland habitat within the Project area. Table 5.7-6, HABITATS AFFECTED BY FUEL REDUCTION ACTIVITIES, outlines the impacted habitat for each fuel reduction zone.

TABLE 5.7-6
Habitats Affected By Fuel Reduction Activities

Zone 1 Impacts	
Habitat Type	Acres
Blue Oak Woodland	31.0
Blue Oak Foothill Pine	1.2
Disturbed	3.1
Mixed Chaparral	9.7
Total	45.0
Zone 2 Impacts	
Habitat Type	Acres
Blue Oak Woodland	33.0
Blue Oak Foothill Pine	1.3
Disturbed	5.3
Mixed Chaparral	6.7
Total	46.3

Source: ESA, *Biological Resources Report*, April 2009.



The majority of the Project site is composed of the blue oak woodland (49.56 percent) and mixed chaparral (38.16 percent) habitat types. These habitat types would also be most affected by the proposed fuel treatments. Other, more biologically sensitive habitat types, such as riparian and seasonal wetland, would be largely unaffected by the proposed activities. In addition, the proposed treatment prescriptions would preserve habitat components that are important to many species of wildlife, such as large diameter (at least 6 inches DBH) oaks and pines as well as maintaining 50 percent canopy closure within the Zone 2 treatment areas. The treatments would also likely have some beneficial effects; through treating areas around structures, it substantially reduces the potential for human-caused ignitions within the study area affecting untreated habitat (including riparian habitat) within and adjacent to the study area.

Nevertheless, the proposed fuel treatments could adversely impact biological resources, including nesting raptors, valley elderberry longhorn beetle (VELB), habitat (elderberry shrubs), and fisheries in Salt Creek. Nesting raptors may be disturbed by vegetation removal activities and abandon active nest sites. Elderberry shrubs that provide suitable habitat for the federally listed VELB may be incidentally removed by the proposed treatments. Fish, including salmonids, may be affected by sediments discharged from the areas disturbed by the fuel treatments. Implementation of MM 5.7-1h would mitigate these potential impacts to a less than significant level.

Mitigation Measures:

Special-Status Fish Species Habitat

MM 5.7-1a Prior to issuance of a City grading permit effecting any jurisdictional waters as identified in the Project wetland delineation, the developer shall file a pre-construction notification with the Corps and secure any necessary Corps permit resulting from said consultation. As determined necessary by the Corps, formal consultation with NMFS may be initiated under Section 7 of the ESA. If NMFS concurs that the proposed Project will not affect listed salmonid species, no further measures are required with regards to protection against direct "take". If NMFS will not concur with a "no effect" or "not likely to adversely effect" determination, the following measures shall be implemented:

1. No activities shall occur within 100 feet of Gold Run Creek until Incidental Take authorization has been obtained from NMFS.
2. To the maximum extent practicable, in-channel construction shall be restricted to the dry season as stipulated by the lead regulatory agency (i.e., NMFS, CDFG) when stream flows have subsided and Steelhead and salmon are not present.
3. Additional measures to avoid direct impacts, beyond restriction of instream activities in Gold Run Creek, may include, but not be limited to, the following:
 - Retain a qualified biologist to conduct a pre-construction survey to determine if Steelhead or salmon are present in or within the vicinity of any proposed in-stream activity. If none are present, construction shall proceed pursuant to any conditions required by NMFS and/or CDFG in accordance with the FESA and CESA.



For any features determined to not be subject to Corps jurisdiction during the verification process, authorization to discharge (or a waiver from regulation) shall be obtained from the RWQCB. For fill requiring a Corps permit, a Section 401 water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Loss of wetlands and/or jurisdictional waters shall be compensated at a minimum 1:1 ratio or at a rate determined by the lead regulatory agency. This can be accomplished through purchase of appropriate credits at an approved mitigation bank, appropriate payment into an approved in-lieu fee fund, or on-site or off-site creation, monitoring, and maintenance (as approved by the Corps, NMFS, CDFG, and RWQCB).

MM 5.7-1b Implement MM 5.11-1b in Section 5.11, HYDROLOGY AND WATER QUALITY.

Special-Status Birds, Raptor Species, and Migratory Birds

MM 5.7-1c Prior to grading permit issuance or vegetation disturbance (between April 1st and July 31st), in areas where suitable nesting habitat exists for raptors, yellow warbler, yellow-breasted chat, and other migratory birds, a qualified biologist shall complete a bird nest search (pre-construction survey) of all suitable habitats to support a nest, and of the fields where there is a potential for ground nesting. The survey should be conducted no more than 30 days from the onset of construction. If an active nest is found within 500 feet of a construction area, the Project Applicant shall consult with a qualified biologist to determine appropriate measures to avoid disturbance of the nest(s) during any activities with the potential to disturb active nest(s) (i.e. a no-impact buffer delineated around the nest while the nest is active). Measures to be taken shall be reviewed by the CDFG and the City of Redding prior to initiation of any activities with the potential to disturb active nest(s).

Special-Status / Rare Plant Species

MM 5.7-1d Prior to the initiation of on-site grading and throughout the duration of Project construction activities a 100-foot buffer surrounding the elderberry shrubs shall be established. The buffer shall be fenced with temporary fencing and flagging in accordance with the USFWS protocol.

MM 5.7-1e Prior to the initiation of on-site grading, a special-status plant survey shall be conducted on-site by a qualified botanist during the appropriate survey period for the following special status plant species: pink creamsacs (*Castilleja rubicundula ssp. rubicundula*) between April and June; northern clarkia (*Clarkia borealis ssp. borealis*) between June and September. In the event that special status plant species are identified, a relocation/transplantation program shall be established and approved by the CDFG prior to commencement of construction activities.

Northwestern Pond Turtle

MM 5.7-1f Within 48 hours prior to any disturbance within suitable habitat for northwestern pond turtle, proposed disturbance areas shall be surveyed for the presence of this species by a qualified biologist. Surveys of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If the species is detected, individuals shall be relocated to



a suitable site within the same drainage by a qualified biologist. If the species was detected during the pre-construction survey, a monitoring biologist will be onsite during initiation of construction activities to ensure that no turtles are present during the onset of disturbance activities. If a northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any trapped, injured, or killed northwestern pond turtles shall be reported immediately to the CDFG.

California Red-Legged Frog and Foothill Yellow-Legged Frog

MM 5.7-1g Two weeks prior to any disturbance within suitable habitat for the California red-legged frog and Foothill yellow-legged frog, proposed disturbance areas shall be surveyed for adults frogs, tadpoles, or eggs by a qualified biologist. If either species is detected, the biologist shall contact the USFWS (for the California red-legged frog) and CDFG (for the Foothill yellow-legged frog) to determine if moving any of the life stages is appropriate. In making this determination, the USFWS and CDFG would consider if an appropriate relocation site exists. If the USFWS and/or CDFG approves moving the animals, the biologist shall be allowed sufficient time to move the animals from the work site before work activities begin.

Fire Fuel Reduction Plan

MM 5.7-1h Project grading and/or clearing plan shall incorporate the following to ensure the protection of sensitive species and/or habitats as a result of implementation of the Fire Fuels Reduction Plan.

1. Selective removal within 50 feet from the riparian edge or 100 feet from top of bank of Salt Creek and Gold Run Creek, whichever is greater, for fire protection, all vegetation trimming and removal shall be performed by using hand tools to prevent additional damage to riparian vegetation and soil compaction from the use of heavy equipment or vehicles. All slash materials (limbs, branches and other woody debris) resulting from trimming and removal activities should be removed from the buffer area by hand and properly disposed at an appropriate off-site location or retained for on-site erosion control in an appropriate manner.
2. Selective removal within 25 feet of the flow line of other jurisdictional features tributary to Salt Creek and Gold Run Creek shall be performed by hand.
3. Implement MM 5.7-1d and MM 5.7-1e.

Level of Significance: Less than significant impact with mitigation incorporated.

JURISDICTIONAL WATERS AND RIPARIAN HABITAT

5.7-2 PROJECT IMPLEMENTATION MAY ADVERSELY AFFECT JURISDICTIONAL WATERS AND ASSOCIATED RIPARIAN HABITAT.



Impact Analysis: Approximately 3.84 acres (32,144.7 linear feet) of jurisdictional other waters of the U.S. and 3.73 acres of wetlands were identified in the Project area, for a total of 7.57 acres of potentially jurisdictional waters of the U.S. Riparian wetlands account for approximately 3.65 acres, and seasonal wetlands account for approximately 0.08 acres in the Project area. Other waters of the U.S. within the study area include 0.35 acres (2,012 linear feet) of perennial stream, 2.22 acres (9,086 linear feet) of intermittent stream and 1.26 acres (20,619 linear feet) of ephemeral stream. According to Table 5.7-7, POTENTIALLY IMPACTED WETLANDS AND OTHER WATERS OF THE U.S., the proposed Project would directly impact up to 0.257 acres of wetlands and other waters of the U.S.

**TABLE 5.7-7
Potentially Impacted Wetlands and Other Waters of the U.S.**

Jurisdictional Habitat Type	Impact Area (Acres)
Wetlands	
R-5	0.090
R-7	0.024
Total Wetlands	0.114
Other Waters of the U.S.	
ED-2	0.013
ED-3	0.021
ED-6	0.005
ED-9	0.002
ED-10	0.031
ED-15	0.001
ED-31	0.003
ED-32	0.001
ED-42	0.002
ED-43	0.001
ED-62	0.009
ID-1	0.041
PD-2	0.007
PD-3	0.006
Total Other Waters of the U.S.	0.143
TOTAL	0.257

Source: *Biological Resources Report*, ESA, April 2009.

The Corps must authorize construction activities expected to adversely affect these features; thus, a Section 404 Permit (anticipated to be a Nationwide Permit 29, *Residential Developments*, due to avoidance and minimization measures) will have to be filed with the Corps. Construction activities resulting in fill also require a Section 401 Water Quality Certification from the Regional Water Quality Control Board



(RWQCB). Furthermore, a Streambed Alteration Agreement would be required from the CDFG (pursuant to Fish and Game §2081(b)).

Potential impacts to the jurisdictional waters would be reduced to a less than significant level through compliance with the regulatory process (i.e., Section 404 Permit, CDFG Agreement and 401 Certification). In addition, future development would be subject to compliance with RMC Chapter 18.48 (River/Creek Corridor Development) regarding the provision of adequate buffer areas between creek corridors and adjacent development, and *General Plan* Policy NR6A regarding the preservation of jurisdictional waters. Compliance with Code requirements and *General Plan* policies would further reduce potential impacts.

Mitigation Measures:

MM 5.7-2 Implement MM 5.7-1a.

Level of Significance: Less than significant impact with mitigation incorporated.

FISH AND WILDLIFE CORRIDORS

5.7-3 *DEVELOPMENT OF THE PROPOSED PROJECT WOULD NOT INTERFERE WITH MOVEMENT CORRIDORS FOR FISH OR WILDLIFE SPECIES.*

Impact Analysis: The Project site is situated on the west end of the City. Eureka Way (SR-299) is located south of the proposed Project and residential developments are to the east and south. The Sacramento River is located to the north, and Salt Creek flows along the northwest boundary. Topography of the site is steep along its northern portion and is generally covered by blue oak woodlands.

The proposed Project has the potential to affect local movements of fish and wildlife. As described above, Salt Creek provides suitable fisheries habitat. However, it is unlikely that the proposed Project would adversely affect migrating salmonids, as no Project activities would directly affect Salt Creek, and salmonids that may occur in Gold Run Creek would be avoided based upon MM 5.7-1a. Measures to protect these resources during implementation of the Fire Fuel Reduction Plan are also described in MM 5.7-1h.

Terrestrial wildlife, including Columbian black-tailed deer (*Odocoileus hemionus columbianus*), may be affected by the proposed Project through impeding or displacing seasonal movements. Blue oak woodlands provide shelter for deer, while the mixed chaparral provides suitable forage. The forage quality of the site will likely improve post fuel treatments as new, young shrubs germinate (Sommer et al., 2007). Forage quality in this area (Cascade-North Sierra Nevada Unit) is a limiting factor for deer (CDFG, 1998). Therefore, deer may use the site for both foraging and loafing under post-Project conditions. Based on the surrounding topography and land uses, it is likely that deer use Salt Creek for most north-south movements through the site, from the Sacramento to major blocks of open space habitat to the southwest. As this habitat would be protected from Project activities, it is not anticipated that the seasonal movements of deer would be impacted by the proposed Project. Therefore, impacts to movement corridors for fish and wildlife species are considered to be less than significant.

Mitigation Measures: No mitigation measures are required.



Level of Significance: Less than significant impact.

CUMULATIVE IMPACTS

5.7-4 CUMULATIVE DEVELOPMENT (INCLUDING THE PROPOSED PROJECT) IN THE AREA WOULD NOT ADVERSELY AFFECT THE AREA'S BIOLOGICAL RESOURCES.

Impact Analysis: Development within the City would result in the cumulative loss of natural vegetation. However, each project is required to comply with the FESA and CESA, which protect Threatened and Endangered species. Additionally, projects would be required to comply with the goals and policies in the City's *General Plan*, which protect plant and wildlife species and their habitats, ensure that impacts on biological resources are avoided or minimized during construction and development. With compliance to federal, state, and local regulations, cumulative impacts to candidate, sensitive, or special status species would be reduced to less than significant levels.

Riparian habitat and other sensitive natural communities occur within the City and development in the City would result in the cumulative loss of riparian habitat. Riparian habitat is protected by §1600 of the Fish and Game Code and Section 404 of the CWA. Additionally, the City's *General Plan* includes goals and policies that would avoid or minimize impacts to riparian areas. Each project is required to comply with federal, state, and local regulations (FESA, CESA, CWA, and the City's *General Plan* goals and policies). Cumulative impacts to riparian habitat would be reduced to less than significant levels.

Streams under the jurisdiction of the Corps, RWQCB, and CDFG are located within the City. The federal and state laws and regulations (Sections 401 and 404 of the CWA and Section 1600 of the Fish and Game Code) would require a permit/agreement prior to alteration of these jurisdictional areas which may also include consultation the USFWS and/or NMFS pursuant to FESA. Federal and state regulations would be required to be implemented prior to development activities. Each project is required to obtain all appropriate permits for impacts on Corps and CDFG jurisdictional areas. Additionally, mitigation for the loss of jurisdictional areas and wetlands are required to be no less than a 1:1 ratio. With compliance to federal, state, and local regulations, cumulative impacts to jurisdictional waters and wetlands would be less than significant.

Mitigation Measures: Refer to MM 5.7-1 through MM 5.7-2.

Level of Significance: Less than significant impact with mitigation incorporated.



5.8 CULTURAL RESOURCES

The purpose of this section is to identify the potential for cultural resources to occur on the proposed Project site and to assess the significance of such resources. This section is based on the *Cultural Resources Survey*, prepared by ENPLAN, dated February 2009 (refer to Appendix 15.7, CULTURAL RESOURCES SURVEY). The analysis in this section has been prepared in accordance with §15064.5 of the State *CEQA Guidelines*, which considers potential impacts on prehistoric, historic, and paleontological resources. Two distinct topographic/development areas are present within the proposed Project boundaries; therefore, the *Cultural Resources Survey* divided the proposed Project site into two areas: Area 1 and Area 2. Area 1 consists of the large, level, central portion of the proposed Project with slopes less than 20 degrees. Area 1 is slated for residential development and will be subjected to extensive grading. Area 1 encompasses approximately 60 percent of the total Project area. Area 2 includes the remaining portion of the proposed Project area, which includes slopes greater than 20 percent and the area along Salt Creek and Gold Run Creek, and is proposed mostly as unimproved open space.

5.8.1 EXISTING CONDITIONS

CULTURAL CONTEXT

Regionally, the Project area is located at the juncture of the northwestern end of the Sacramento Valley within California's Great Central Valley and the foothills of the southern extent of the Klamath Mountains. Elevations in the Project area range from about 520 to 740 feet above sea level. The central portion of the proposed Project is a nearly flat plateau that is surrounded by moderately steep- to steep-sloped canyons. Geologically, Quaternary Pleistocene Nonmarine sedimentary deposits are underlain by Devonian and pre-Devonian metavolcanics (including Balakala rhyolite and other igneous and meta-igneous rocks), which are underlain by Devonian Marine deposits, including Copley greenstone.

Salt Creek approximates the western and northern boundaries of the proposed Project and Gold Run Creek approximates the eastern and southern boundary. Both creeks drain into the Sacramento River approximately 100 feet north of the proposed Project. The site sits on top of a plateau which is bordered by a series of tributary drainages that serve as tributaries to these two creeks. The area supports a blue oak/gray pine woodland, a climax community found on well-drained sites with shallow soils. Blue oak is the dominant tree species and gray pines are scattered throughout the community, being most dense in the northwestern corner of the proposed Project. Black oaks, interior live oaks, knobcone pine, and ponderosa pine are also present on east- and north-facing slopes. A very dense shrub layer is present throughout much of the proposed Project. Common shrub species include whiteleaf manzanita, poison oak, toyon, buckbrush, mountain-mahogany, and other species. An herbaceous understory occurs in small openings and in disturbed areas such as adjacent to onsite roads.

Historic land uses in the vicinity of the proposed Project consisted primarily of mining activities during the 1860s and early 1900s. As a result of these activities, ridge tops, hillsides, stream terraces, and stream beds have been widely altered. Contemporary and recent land use in the proposed Project's vicinity is focused on residential and commercial development. Current disturbance to the Project site includes three power line corridors ranging from 40 to 500 feet in width, numerous unimproved roads, off-road vehicle traffic, extensive illegal dumping, numerous homeless camps, fire-wood cutting, and vegetation clearing.



HISTORICAL CONTEXT

Ethnography

At the time of European-American contact (1830-1840), the proposed Project appears to have been inhabited by the *Elpom* Wintu, also referred to as the Keswick Wintu. The Wintu belong to the family of Penutian speakers, a linguistic stock whose members are found throughout California within four main language families including Wintuan, Maiduan, Yokutsan, and Utian. Wintuan language subgroups consist of Wintu (Northern Wintuan), Nomlaki (Central Wintuan) and Patwin (Southern Wintuan). The Wintu were further divided into nine major groups based upon their geographic location, including the *Elpom* Wintu.

The Wintu subsistence/settlement strategy was similar to many other California groups, and was based on seasonal transhumance and the exploitation of vegetal resources, fish, and game. Wintu diet/subsistence focused on three predictable resources such as acorns, deer and salmon, all of which were of high nutritional value, easily stored, and dependably available on a seasonal basis. The Wintu lived in permanent villages during the winter, subsisting mainly on stored foods. In the spring and summer months, they occupied resource procurement camps (in brush shelters) usually located no more than four days' walk from the main village. Food resources were periodically returned to the base camp for storage, which was guarded by old people and small children unable to participate in the gathering rounds.

It is estimated that the Wintu arrived in the Sacramento Valley approximately 1,000 to 1,200 years ago, resulting in the displacement of Hokan-speaking peoples from the area. Pre-contact population estimates for the Wintu are 14,250. In 1910, there were an estimated 395 Wintu remaining. It is estimated that approximately 75 percent of the Wintu populations living along the Sacramento River were lost to malaria and influenza epidemics brought about by the arrival of European-American trappers and settlers in the middle 1800s.

Prehistoric Summary

The earliest systematic archaeological investigations in northern California were conducted during the 1930s and 1940s, and were associated with the construction of Shasta Dam. Smith and Weymouth (1952) recorded a large number of prehistoric midden sites along Squaw Creek and the Sacramento, Pit, and McCloud Rivers, with artifact assemblages suggesting that habitation of the sites by the Penutian-speaking Wintu occurred by about 1,000 years ago. Later work at Squaw Creek suggested occupation of the area began before 6,500 years ago and the artifact assemblages suggest that Hokan-speaking peoples inhabited these sites prior to Wintu occupation.

Archaeological investigations in northern California at Clear Lake near Borax Lake provide clear evidence that the region was first colonized at the end of the Pleistocene and associated with the "Western Clovis Tradition," dating around 13,500 years ago. It has still not been determined whether these early Californians were present in the northern Sacramento Valley at that time.

It has been postulated that these earlier cultures utilized a different subsistence/settlement strategy from that of the ethnographic Wintu populations. Ethnographic Wintu villages are concentrated along the Sacramento River and its tributaries, as the Wintu subsistence strategy was intensively focused on riverine resources. The Hokan peoples who inhabited the area before proto-Wintu groups arrived are believed to have been seasonally-mobile hunter-gatherers, and village sites from this time period are primarily located along



tributaries to the Sacramento River in riparian and upland areas. The paleo-Indian cultures that existed prior to these Hokan peoples are believed to have been primarily big game hunters.

Historic Summary

The first known recorded historic use of the region by European-Americans occurred during the late 1820s and early 1830s, when the trapping expeditions of Jedediah Strong Smith, Peter Skene Ogden, and the Hudson Bay Company entered the Sacramento Valley. Euroamerican settlement and population in the northern Sacramento Valley increased as a result of the acquisition of the Rancho Buenaventura land grant by Pierson B. Reading in 1846 and gold mining which began in 1849; the Homestead Act of 1862; the arrival of the Central Pacific Railroad in 1872, and the copper mining boom that began in the 1880s; and the Central Valley Project of 1935. These transforming events resulted in population increases within Shasta County in excess of 100 percent from 1850-1860, 1870-1880, and 1930-1940.

5.8.2 METHODOLOGY

As described below, the following specific tasks were conducted:

- Archaeological inventory survey;
- Information gathering from the Northeastern Center of the California Historical Resources Information System at California State University, Chico (NE/CHRIS); the Native American Heritage Commission (NAHC); the Shasta County Historical Society; the local Native American community; various maps on file at ENPLAN; and, records on file at BLM Redding and at <http://www.glorerecords.blm.gov/>;
- A pedestrian field survey of Project area;
- Extended Phase I Archaeological Testing; and
- Consultation with other sources.

ARCHAEOLOGICAL INVENTORY SURVEY

The archaeological inventory survey was conducted in conformity with the standards, guidelines, and principles outlined in the amended State *CEQA Guidelines*, including §15064.5. Compliance with §106 of the National Historic Preservation Act (NHPA) requires completion of Projects in conformity with the standards, guidelines, and principles in the *Advisory Council's Treatment of Archaeological Properties: A Handbook* (1980), and *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (1983).

Northeast Information Center Records Search

The archaeological records of the Northeast Information Center at California State University (CSU), Chico, were examined on May 17, 2006, and covered a approximate 0.5-mile radius around the proposed Project. Research included reviewing maps and records for archaeological surveys, sites, and other cultural resources in this portion of Shasta County, and also the following documents on file at NE/CHRIS: *National Register of Historic Places-Listed Properties and Determined Eligible Properties* (1988, Computer Listings 1966 through 7-2000 by National Park Service); the *California Register of Historical Resources* (2006); *California Points of Historical Interest* (1992); *California Historical Landmarks* (1996); *USGS Redding*



1:125,000 quad map (1900); and the *Directory of Properties in the Historic Property Data File for Shasta County* (2006). Overall, the goals of the records search are to determine: (a) the extent and distribution of previous archaeological surveys, (b) the locations of known archaeological sites and any previously recorded archaeological districts, and (c) the relationships between known sites and environmental variables. This step is designed to ensure that, during subsequent field survey work, all archaeological and historic resources considered significant or potentially significant per CEQA are discovered, correctly identified, and properly interpreted.

Map Research

Map research was conducted utilizing the following maps that are on file at the Redding BLM office and/or Shasta Historical Society: the *Map of Major P. B. Reading's Mexican Grant on the Sacramento River* (1854); *USGS Topographic Map: Redding* (1901); the *Shasta County Mineral Map* (Weigel 1908); the *1912 Map of the County of Shasta* (Weigel 1912) and its update by Hornbeck (2001); the USGS 15-minute quadrangle of Redding, Calif. (1944); and the USGS 7.5-minute quadrangle of Redding, California (1957, photo-revised 1969). According to all map sources, the proposed Project is generally bounded by the railroad to the north, Salt Creek to the north and northwest, an unnamed drainage along most of the eastern border (which also defines the Redding City Boundary at this point), and Eureka Way (SR-299) to the south. Weigel's 1908 map shows the Gold Leaf Tram trending SW/NE through the center of the proposed Project. All maps show a road connecting Redding to Shasta just south of the Project area; this is modern-day Highway 299. Several structures appear on the USGS 1901 map near the confluence of Salt Creek and the Sacramento River. One of those structures is still visible on the 1944 USGS quadrangle map, but it does not appear on the 1957 USGS quad map. In addition, there are a number of structures visible along Highway 299 on the 1944 and 1957 quad maps.

Pedestrian Field Survey

The majority of the pedestrian field surveys were performed on seven separate visits between June 8, 2006 and September 27, 2006. In an attempt to relocate the Gold Leaf Tram and site CA-SHA-550, and to examine proposed foot trail routes in Area #2, archaeological technicians conducted intuitive surveys on June 8 and 9, 2006 along several trail routes, the Gold Leaf Tram corridor, and Salt and Gold Run Creeks; however, CA-SHA-550 or remnants of the tram were not relocated. Additional survey and site recordation between September 2008 and January 2009, during which the two structures were documented in January 2009. The objective of the cultural resources survey was to identify and record all cultural resources within the Project study area. In approximately 93 percent of the area, an intensive-level pedestrian survey was completed. Approximately three percent received general coverage and four percent received a cursory examination. All identified resources were recorded.

Taking into consideration the results of previous surveys conducted within the vicinity of the proposed Project, in addition to the Project area's terrain, dense vegetation and background context, an intensive survey strategy was utilized when possible. Using this approach, surveyors walked systematic meandering transects spaced at 15- to 20-meter intervals whenever possible.



Meandering was employed in all cases in order to view exposed mineral soils visible from linear transect routes and to weave through vegetation. Ten percent of the Project area contained steep slopes and/or dense vegetation, or both. Because of these environmental restrictions, a more general survey strategy was employed in a approximately a third of these areas. This strategy employed meandering transects spaced at 20- to 30-meter intervals. Lateral surface visibility was restricted in these areas due to dense manzanita and irregular topography.

In four percent of the Project area, only a cursory level of examination could be performed. Survey in these areas, which included steep slopes and very dense vegetation, was limited and transects were performed only where passage was possible.

Throughout the survey area, ground surface visibility ranged from 0 to 90 percent, averaging about 25 percent due to vegetation and duff. Visibility was improved by clearing various-sized patches of soil along survey routes and examining exposed areas along stream terraces and beds, ridge tops, roads, ditches, foot trails, transmission line corridors, areas subjected to past mining and brush clearing, and where vegetation cover was sparse. In addition, rodent activity was moderate within much of the Project area, resulting in increased mineral soil exposure. All exposed mineral soil visible along survey transects was checked for signs of soil discoloration and/or cultural resources. Soil stratigraphy was closely examined in stream cuts, road cuts, and large rodent burrows. soil exposed by rodent activity was closely examined; and a boot heel or hoe was used to expose soil along transects.

Throughout the proposed Project area, extensive areas of disturbance were noted. A number of dirt roads and trails have been established throughout the area for purposes of access, off-road vehicle use, wood cutting, illegal dumping, and access to transmission corridors. Historic and recent debris scatters are evident throughout the Project area, with the greatest concentration occurring in the central portion of the site, along existing dirt roads. The majority of this material has been scavenged to furnish homeless camps and for target practice. Recent trash from homeless occupants has been mixed with earlier scatters. Other disturbances include the former use of heavy equipment for clearing of brush and other areas, old road alignments, and the creation of new roads and fire breaks for fire suppression purposes. Such activities may have resulted in damage to many of the historic and prehistoric sites and features within the Project area.

When cultural resources were encountered during the pedestrian survey, the entire vicinity within 15 meters of the discovery was intensively examined. This included exposing mineral soils as necessary using a hoe, boot heel, handpick, and/or trowel. At the time of the survey, GPS coordinates of most cultural resources were recorded by use of a Garmin and/or Magellan WAAS-enabled GPS unit. When possible, recorded locations were verified by use of topographic and aerial maps viewed in ESRI GIS ArcEditor 9.1. During the pedestrian survey, descriptions of identified cultural resources were gathered to facilitate completion of primary records for each site or feature. In most cases, resources were photographed.

During the fall of 2004, ENPLAN acquired a sizeable amount of LiDAR imagery, which enabled the generation of Project area maps with hillshade raster models. These maps allowed for the verification of the locations of ground features discovered as a result of the survey, and for the clarification of boundaries of some sites.



Extended Phase I Archaeological Testing

Extended Phase I testing was performed on the Wheel-Rut Scatter prehistoric site (discussed below under "Prehistoric Cultural Resources") on October 11, 2006, in order to determine the presence of and possible extent of a subsurface deposit. A total of seven shovel test probes (STPs) measuring 50 by 50 centimeters were excavated in arbitrary 10 centimeter levels following the ground contour to a depth of 20 centimeters. All excavated soils were screened through ¼-inch mesh. Artifacts found on the surface and within each level were collected and bagged separately, and labeled by provenience. A total of seven flakes, one possible groundstone fragment, and one historic artifact were collected and taken to the lab for further analysis. Two fragments of historic or modern glass were noted but not collected. All STP units were located in what appeared to be undisturbed areas within three meters of the graded access road, and evidence of soil disturbance was apparent. STP placement attempted to avoid berms caused by blading, but soils still demonstrated evidence of disturbance.

Nothing observed during the investigation indicated that the proposed Project site contains a cultural deposit. The majority of the artifacts recorded (seven) came from the upper disturbed portions of the excavations with at least one of the remaining flakes located close to the contact between this layer and the underlying natural soil.

A datum was established and its location was recorded using a Mobile Mapper GPS unit. The location of the southeast corner of each of the STPs was then measured using a laser rangefinder. The units were then backfilled. The proposed Project site was revisited on October 31, 2006. At this time, the datum was marked with a survey cap mounted on rebar, stamped with the text "ENPLAN/BASEMAPPING CONTROL POINT/278.06/10-10-06," which was then covered with a small rock cairn. In addition, all the prehistoric artifacts were reburied in the NE corner of STP 4 while still in their labeled plastic bags, with a 2006 penny placed on top of the bags.

CONSULTATION WITH OTHER SOURCES

A Request for Comment letters was mailed on May 11, 2006, to the following interested parties: the Native American Heritage Commission (NAHC); President, Shasta Historical Society; James Hayward, Sr., Cultural Resources Compliance, Redding Rancheria Tribal Office; Bob Burns, Wintu Education and Cultural Council; John Castro, Cultural Liaison, United Tribe of Northern California, Inc.; Caleen Sisk-Franco, Tribal Chair, Winnemem Wintu Tribe; Wintu Tribe of Northern California; Carol Sinclair; Loretta Root; and Carol Y. Bowen.

5.8.3 FINDINGS

NORTHEAST INFORMATION CENTER RECORDS SEARCH

Records indicate that three archaeological surveys have been previously conducted within the proposed Project area; however, no cultural resources were recorded as a result of these surveys. In addition, 16 previous surveys have been conducted within 0.5 miles of the proposed Project. One prehistoric site, CA-SHA-550, a lithic scatter consisting of five flakes, was recorded in 1974 immediately adjacent to the Project along Eureka Way (SR-299). This site was located on a small knoll, which was subsequently removed by highway construction. Two other prehistoric sites, CA-SHA-1450/H and 45-004111, were recorded within a 0.5-mile radius. CA-SHA-1450/H is a multi-component site covering a large area (137,500 m²) just north of the Sacramento River where it bends to the east, adjacent to the proposed Project boundary. The



prehistoric components of this site are lithic scatters located on two terraces above the River. A fourth prehistoric site, designated 45-004111 and consisting of another lithic scatter, is located approximately 0.4 miles southeast of the Project area. Records also indicate that a total of ten historic archaeological sites have been recorded within 0.5 miles of the proposed Project site. These sites consist of ditch segments (including Clear Creek Ditch and the Stanford Trail Ditch), a segment of the Shasta to Red Bluff Road, a mine shaft at the Minneshasta Mine, a cabin pad, mining camp, dam, and bridge, as well as tailings, rock walls, and refuse deposits.

PEDESTRIAN SURVEY FINDINGS

As a result of the field survey of the Project area, one historic mining site, one prehistoric site, nine trash dump/scatters, one sheet metal scatter, two residences and five prehistoric isolates were discovered. Prehistoric resources include the Wheel-Rut Scatter and prehistoric flake isolates. Historic resources can be divided into four resource types: (1) the Eureka Tellurium Gold Mining Complex; (2) trash/dump scatters; (3) the Shack Site (a sheet metal scatter and building); and (4) two buildings at 4466 Eureka Way and 4504 Eureka Way. These resources are further discussed and evaluated within Section 5.8.6, IMPACTS, below. A more detailed discussion of resources identified within the Project area is included in Appendix 15.7, CULTURAL RESOURCES SURVEY.

PREHISTORIC CULTURAL RESOURCES

One prehistoric site, the Wheel-Rut Scatter, was recorded in the central portion of the proposed Project area, extending approximately 130 meters along a road. This site consists of several grey chert and greenstone lithic artifacts found within a road bed, including five cores, five flakes, and one possible hammerstone. The artifacts located were found in the lowest parts of the road, some of them partly buried. The road is incised to a depth of approximately ten to thirty centimeters below the adjacent ground surface. The artifacts extend approximately 130 meters along the road. Two artifacts, a hammerstone and core, were found immediately adjacent to one another and were recorded with a single GPS point and cultural resource number (CR No. 88).

A concentration, consisting of five artifacts (CR Nos. 93, 94, 97-99), is located near the center of the site within the roadbed. Three artifacts (CR Nos. 89, 90, 92) were located starting approximately 60 meters further northeast, also within the road bed. Two more artifacts (CR Nos. 88, 96) are located approximately 40 meters to the southwest of the central concentration. Initially, a stone slab thought to be a possible metate (initially designated CR No. 95), and a triangular stone that was thought to have been ground were also identified in this area. However, lab analysis concluded that these pieces were neither groundstone nor culturally modified artifacts.

An intensive survey covering 15 meters to either side of the road was performed, and only one artifact was located outside of the road bed. This was a single flake, located atop a berm approximately five meters to the north of the road. There are signs that the road may have been graded in the past. Examination of the road cut indicated that there was no obvious deposit at the site, as there was no sign of soil discoloration or midden.

The Wheel-Rut Scatter appears, from all evidence, to be a highly disturbed light lithic scatter containing a limited array of artifacts (12) and no temporal indicators. A site of this type would have limited research value and would not be considered an important resource under §106 or CEQA unless it had an intact cultural deposit containing additional artifacts with good integrity. To clarify this issue, Extended Phase I



testing was performed at this site on October 11, 2006 to determine the presence of and possible extent of a subsurface deposit. Excavations at the site are described below.

In addition to the Wheel-Rut site, there were five prehistoric isolates (CR Nos. 86, 87, 100-102) found within the Project area, including two greenstone cores, a greenstone flake, a green chert flake, and a possible chert tool. Most isolates are located within or adjacent to roads.

HISTORIC CULTURAL RESOURCES

Historic resources can be divided into four resource types: (1) the Eureka Tellurium Gold Mining Complex; (2) trash/dump scatters; (3) the Shack Site (a sheet metal scatter and building); and (4) two post-1940s residences.

Eureka Tellurium Gold Mine Complex

Research revealed that the Project is located in an area historically owned by the Eureka Tellurium Gold Mining Company. This area has likely been a mining site since the 1850s when it was part of the original Rancho Buenaventura land grant owned by Pierson B. Reading. The earliest activity, based on historical information, was placer mining along Salt and Gold Run Creeks and their tributaries. This is verified by the numerous tailing piles identified along these drainages during the archaeological survey. Although little datable material were associated with the placer mining features at the site, the fact that some of them are disturbed or overlain by lode mining features supports an earlier date for them. Historically, the lode mining at the site is associated with the Eureka Tellurium Gold Mining Company between 1901 and 1905. However, historic records suggest that this area was subjected to later extraction of quartz for flux in the local copper smelters at the turn of the century and may have been further worked during the depression. Unfortunately, dating of the various features and locales at the site has been a major problem during its recordation. One of the most marked issues at the site is the exceptional lack of historic trash associated with these mining areas. In part, this may be due to the canvassing of the area by local collectors. Recent excavations were noted at three locations and some of the holes and back-dirt piles noted at some of the mining areas may be the result of earlier investigations by collectors as well. In addition, many portions of the site have been contaminated by contemporary use by homeless individuals who appear to have occupied the site off and on for at least the last thirty to forty years. Thirty-plus homeless camps of various ages, some still occupied, and associated trash scatters were noted during the survey.

The pedestrian survey resulted in the identification of numerous locales/features associated with the historic-era mining. These locales are grouped as follows: placer mining areas (PM), lode mining areas (LM), ditch systems (DS), trails (TR), roads (RD), and isolated mining features (i.e., stand alone features or structures). Within placer and lode mining areas the following classes of features are present: mine tailings, prospect pits, ditches, roads, terraces, trails, adits, concrete features, and rock alignments. Most areas contain some combination of these features. Each resource or group of resources was identified with GPS points and assigned a name/number that reflected the main mining activity present (e.g., PM, LM). *Placer Mining Areas* Although there are numerous signs of placer mining along all of the drainages within the Project APE, there are ten well-developed placer mining areas comprised of placer tailings and other features (PM 1- 10). The majority of these are concentrated at the head of side drainages leading to Salt and Gold Run creeks. These sites are focused on alluvial (gravel) deposits that comprise the upper 10 to 30 feet of the terrace on top of the plateau (Strand 1962). Most were fed water by a ditch (DS 1) that encircles the top of the plateau. Lateral ditches from this ditch were directed into each of the drainages to facilitate mining. Placer mining areas include various combinations historic features including ditch segments, road



segments, stone berms, terraces, tailings piles of rounded cobbles, trail segments, and prospect pits. Associated refuse was absent in most cases, making dating impossible. Placer mining areas range in size from 0.2 to 24 acres. Historic refuse is absent from most of these locales with PM 1 having a limited amount, most not dateable. These areas are described in greater detail within Appendix 15.7.

Lode Mining Areas

Lode mining areas consist of five locales with numerous prospect pits (LMs 1, 3, 4, and 5) and a lode mining area (LM 2) consisting of two adits, a concrete foundation, two light trash scatter, and tailings piles of angular shale/greenstone and quartz. All are concentrated on quartz veins in the bedrock underlaying the alluvial deposits or exposed in drainage channels. Minor amounts of placer mining can be found in adjacent drainages.

Four of these areas (LM 1, 3, 4, and 5) consist mainly of prospect pits "glory holes". Each is focused along the tops of ridges between drains on the edge of the plateau. These areas range in size from 0.5 to 12 acres. They contain numerous pits (20-50) ranging in size from 35' x 35' to 3' x 3'. A very small amount of tailings are in association with these areas indicating that material removed from these features was taken somewhere else for processing. Although ditches lie up-ridge from the prospect pits, there is no indication that water was diverted to these areas. LM 3 and LM 4 contain prospect pits only. LM 5, in addition to mining pits, has two small stone features that are constructed across small drainages. They are three to five feet long and only one cobble layer deep. Their function is unknown.

In addition to placer tailings, LM 1 has a few short segments of ditches within its boundaries. Portions of the Salt Creek Trail and DS 1 cut through LM 1 as well. There is no indication that water was diverted from DS 1 to facilitate mining at LM 1. LM 1 represents the remains of wooden debris and a ladder at the bottom of a large pit. These wooden remains are constructed with milled lumber and modern #8 and #16 penny nails. The remains show little deterioration and do not appear to be associated with turn of the century mining. This debris may indicate that this prospect pit represents a later period of mining activity or depression-era reworking of this locale.

LM 2 is more complex than the four other lode mining areas and contains a much broader range of resources including two adits; extensive shale tailing piles (few cobbles); constructed terraces; concrete footings, slabs and anchors; excavations and prospect pits; trail, ditch and road segments; and a light scatter of historic trash. A variety of contemporary debris is also present due to the use of the area by the homeless. This mining area covers 6.5 acres and starts at the upper end of a tributary to Salt Creek where a RD 1 enters the drainage. One of the adits, two terraces, an apple tree, and the road are located in this area. RD 1 has been cut and converted to a power line access road at this point but still can be followed down the east side of the drainage toward Salt Creek and the LM 2 lode mining area there. Some minor placer tailing piles are located along the creek with a number of prospect pits located on the ridge to the east. One of these pits has a light trash scatter in association with metal fragments; brown, aqua, amethyst, and clear glass fragments; a bucket; white ceramics; bricks and a wash pan.

The majority of the LM 2's features are situated at Salt Creek. This area (approximately 2.6 acres) contains an adit; a group of concrete footings, foundations, and a slab that has been interpreted as the site of a stamp mill; an extensive tailing area; seven constructed terraces; excavations; ditch and road segments; and a number of undetermined features. A light trash scatter containing glass and ceramic wares, cans, flatware, bricks, and various pieces of metal debris is located in the northwest portion of this locus.



Ditch Systems

Throughout the Project site there are numerous mining ditch segments. Most tend to cluster near the edges of the bluff or along ridge sides. The majority lead into or are within placer mining areas at the heads of the drainages or along them. Where possible, ditches were distinguished from historic roads and trails, although they can be difficult to differentiate when overgrown or eroded. Many have deteriorated or filled in and are difficult to trace, while others have been incorporated into the area's natural watershed drainages and roads. In general, linear features that maintained a flat grade or followed contours were defined as ditches. Ditch segments are not associated with any diagnostic refuse. Except for the system of ditches situated on the plateau, ditches are incorporated into the discussion and records for the mining areas they reside in. The extensive system on the plateau is treated separately here because it is not associated with any one mining area but supports all of them.

DS 1 is a large system of interconnected ditches with a larger main ditch that follows the edge of the plateau and feeds a series of smaller ditches that carry water to the placer mining areas. The majority of ditches measure 2 to 3 feet wide and 6 to 12 inches deep. The main ditch which circles the plateau perimeter is 4 to 6 feet wide and up to 2 feet deep. The source of water for the system is unknown. The plateau itself is not large enough to supply adequate water for mining and it is likely that water was taken from a larger source to the south. There is no evidence of this connector on the area proposed for development nor on adjacent properties. More than 50 percent of DS 1 system has been destroyed through the construction of roads, power lines, brush clearing, fire suppression activities, and natural erosion.

Trails

There is one stand-alone historic trail within the Eureka Tellurium Gold Mining Complex. The Salt Creek Trail extends along the south side of Salt Creek from the Sacramento River up Salt Creek approximately one mile where it then crosses Salt Creek and heads west off-site. This trail passes through PM 1 and LM 2 and connects to three other trails which travel up side drainages through these complexes. The trail varies in width from 2 to 4 feet with rock retaining walls located along its route to maintain the grade through steep terrain. In PM 1, it once crossed over a bridge (exhibited by the remaining stacked rock abutments). This trail is currently used by hikers to access the Sacramento Trail system and this activity has increased the erosion of some parts of the trail. Approximately 25 percent of the trail retains elements of its historic use.

Roads

Three historic road segments (RDs 1-3) were encountered during the pedestrian survey. Two segments start on the plateau where they diverge from an existing dirt road. This dirt road may have been a southern extension of these historic features but extensive traffic by vehicles and erosion has destroyed any indication of its historic use. One of these historic segments, RD 1, heads north down and around a ridge into LM 2 where it crosses a drainage just below one of the adits in the LM 2 complex. From there, it continues north toward Salt Creek. Various portions of this segment have been altered by erosion and its conversion to a power line access road. RD 1 is the only feature identified that may come close to following the 1908 mapped alignment of the Gold Leaf Tram. The grade on this road, however, seems too steep for a rail line. The other road segment, RD 2, continues northeast across the plateau toward PM 2. This segment is terminated by a power line corridor. RD 3, starts near the upper end of Gold Run Creek and climbs northeast up the side of the plateau where it is terminated at the intersection of a number of contemporary dirt roads. All three of these features are approximately six to eight feet wide. There are a number of other features within LM 2 which may be road segments but they cannot be clearly defined as roads.



Isolated Mining Features

There are a total of 22 mining-related isolated features that are not tied to any of the developed mining areas associated with the Eureka Tellurium Gold Mining Complex. These include seven isolated prospect pits, three small tailings piles, a trail segment, five isolated ditch points, two undetermined concrete slabs, and four mining areas (i.e., combination of excavations and tailings). None of these isolated features were associated with any refuse that would allow for their dating.

Trash Dumps/Scatters

A total of nine historic debris concentrations were identified. These resources are predominately located in the south-central portion of the Project area, close to either Eureka Way (SR-299) or interior access roads. Scatters 02, 03, and 04 are directly behind private residences and may be associated with domestic/household trash disposal. Unfortunately, the grading of these residential lots to construct the houses, out-buildings, and roads has mixed later materials into and disturbed various portions of these scatters. The remaining scatters are not near any residences nor do historic maps or records indicate that any existed on the parcels near these scatters. None of these scatters can be clearly associated with a particular household and all appear to be the result of convenience dumping. Most are situated adjacent to existing access roads. None have any appreciable depth, with TS 09 being the deepest at twelve inches. As extensive modern commercial and household refuse dumps and vagrant camps are evident throughout the Project area, dumping has obviously been a continuing activity in the area. In addition, many of these dumps have been scavenged by homeless people to furnish their camps and by gun enthusiasts for target practice. Many of the earlier scatters have been contaminated by later dumping. TS 07 is the least contaminated and consists of household items including Fiesta Ware (1930s), Japanese porcelain (1911-12), sanitary cans, and various glass fragments (1930-1960). Within this mix, however, are two post-1980s soda/beer cans.

The nine scatters identified and recorded were adequately isolated from later dumping activities to be defined as discreet entities. These refuse dumps appear to primarily date to between the 1940s and 1970s, the majority reflecting the later date. Dating of these features was based on their content and the fact that they most likely represented one-time dumping events. Therefore, it was assumed that the most recent items in the refuse scatter represent when the material was dumped and its age. For example, TS 01 has a collection of sanitary cans, evaporated milk cans, and steel-side/aluminum-top, pop-top 16 oz. beer cans. The latest datable items are the beer cans which date to between 1963 and 1965. TS 01 is dated to the mid-1960s. A site record was prepared for each identified scatter. For more detail on each, refer to the site records in Appendix B. One additional point should be noted: given the extensive historic mining in the area (1850-1920), it is of interest that there are no dumps associated with this period.

Historic Trash Isolates

As noted above, defined scatters of historic trash were recorded as sites TS 01-09. However, the entire parcel is covered with trash scatters from various dumping episodes and homeless camps. Ninety percent of this material is post-1960s, but within this parcel-wide scatter there are isolated items (i.e., cans, glass, and ceramic fragments) that may represent use or dumping episodes at the site as early as the 1920s. Unfortunately, due to their mixing with later material, the origins of the various items cannot be determined. Therefore, GPS points were not taken for these items and they were not documented.



Shack Site (Sheet Metal Scatter)

The Shack Site is a large scatter of various sized pieces of sheet metal scattered over 1.5 acres. It consists of a large terrace, a smaller secondary terrace, large amounts of metal debris, two trash scatters, a road or trail segment, and a shack that appears to have been built from materials scavenged from the site. The main terrace is approximately 50 feet by 30 feet and is shored at the bottom with rock. Immediately below the main terrace is a smaller terrace which runs the length of the main terrace but is only about seven feet wide. The entire area is scattered with large amounts of rusted sheet metal as well as modern trash. A concentration of modern trash (post 1970s) lies below the shack along the trail/road segment. Several trails of indeterminate age run across the site.

The shack is constructed of a frame made of scavenged wood and oak branches covered with scrap metal collected from the surrounding area. The shack's age is not known but nails used in its construction were of modern design, making it probable that it was constructed in the recent past, likely by homeless persons. A large can dump containing a wide range of debris is located across the drainage below the shack. The dump contains debris (sanitary cans, aluminum fish tins, brown and clear bottle fragments and C and D cell batteries). The date of the site's use is unknown. The terraces, trail/road, and sheet metal may represent an early use of the site, possibly associated with the earlier mining. The shack and trash scatters may reflect a later occupation dating from the 1950s to the 1980s or later.

As previously noted, the vast majority of recorded historic resources within the Project area have few if any diagnostic artifacts associated with them, and those that do, such as LM 2, often do not provide clear dates for these features. Many of the dateable materials found within the Project area are from the 1930s-1970s, and indicate that the original mining claims established at the end of the nineteenth century may have been reworked in later years; however, use of the area by vagrants and for household dumping has complicated attempts to date features using associated debris. It is difficult, if not impossible, to determine whether refuse was deposited by individuals who were working the mining claims, or by later individuals whose activities were not associated with mining. Some refuse has been collected and reused by homeless persons, while numerous other pieces have been utilized for target practice, further complicating the issue. In addition, in many areas refuse appears to be conspicuously absent. This may be the result of past trash clean-up events. As a result of all these factors, dating of the various components of the Project site is not definitive.

Buildings

Two structures may be potentially impacted by the proposed Project. The house at 4504 Eureka Way is within the Project site but will not be directly affected by the proposed Project. The house at 4466 Eureka Way is not within the Project area nor will it be directly affected. However, current Project plans propose to construct an access road between the two structures. Because of the potential for this road to impact these structures' historical setting, if either is determined to be a "Historical Resources" or "Historic Properties," these two structures were documented and evaluated.

The house and garage at 4504 Eureka Way is owned by Sierra Pacific Industries and according to their Shasta County Assessors records was constructed possibly in the 1940s. Assessor records note that it was first assessed in 1954 and included a 528 square foot house with an enclosed porch. Records indicate that the structure was completely remodeled in 1982 with the house expanded to 750 square feet and a 950 square foot detached garage added. It is currently a single-story home with 4' x 8' press-board siding, horizontal slider aluminum windows, and a gable roof with composition shingles.



The house at 4466 Eureka Way is a modest frame dwelling; it appears to be at least 50 years old and probably dates to the 1940s. The basic rectangular structure has a low end-gabled roof. The entrance is oriented toward the east, with what appears to be a modern replacement door. The building retains what may be its original, wide horizontal wood shiplap siding on the south end facing the road and on the east wall. The roof is covered with deteriorated composition shingle. There is a brick interior chimney within the main structure. A porch on the east side runs most of the length of the main structure, covered by an extension of the roof that is supported by 4" x 4" timbers. A shed addition on the west side of the building runs the length of the original structure and is clad in vertical board siding. The roof on this side has been extended to cover the addition. A small addition on the east side of the house is located toward the north end of the building. The level of the roof over this addition is stepped down 1-2 feet below the main roof. This addition is clad in plywood paneling and contains a small covered porch area with the roof supported by 4 x 4s. The rest of this addition appears to be a storage area fitted with plywood panel doors. Two windows on the south side of the house, facing the road, appear to be original wood-framed, double-hung, two-over-two windows. Windows on the east and west are modern aluminum sliders, fitted into new openings. What may have been earlier window openings on the west side have been boarded up. The building is painted with flaking green paint that appears to be decades old.

EXTENDED PHASE I TESTING FINDINGS

On the surface of STP 1, a highly oxidized .22 caliber shell (artifact No.1) with a "Super X" logo stamped onto the end was collected. Online research indicates that .22 caliber Western Super X bullets were first marketed in 1940, and Winchester still makes Super X bullets in this caliber with the same logo. The one possible groundstone fragment was cleaned with a dry brush; all other prehistoric artifacts collected during testing were washed and dried. These were examined closely, and lab analysis determined that five of the possible artifacts collected were not cultural resources. The remaining eight prehistoric artifacts were typed, measured, and described.

Aside from one small fragment of possible groundstone, the remaining artifacts excavated during Extended Phase I testing were flakes. Five flakes were from early core reduction and two were from late core reduction activities. The majority of flakes were found within the upper level of the STP units. Because there is naturally occurring toolstone in the soil matrix, which had been broken during previous ground disturbances in the area, several of the items collected as possible flakes were eventually determined to be the result of mechanical disturbance at the site and not culturally modified.

Stratigraphy within the STP units demonstrated that the soils in the area had been thoroughly disturbed to a depth of approximately 12 centimeters, and, as a result, there is horizontal or vertical integrity at the site. There is no temporal control within the site, due to this fact and the lack of dateable artifacts or toolstone. In addition, the scatter is sparse, little additional information would be obtained by more work at this site.

CONSULTATION WITH OTHER SOURCES

The NAHC responded by fax on May 16, 2006, expressed no concerns for the proposed Project, and stated that a search of the sacred lands files failed to indicate the presence of Native American cultural resources in the immediate Project area. Carol Sinclair responded by phone on May 22, 2006, and indicated that the area near Salt Creek and Iron Mountain is considered sensitive; she requested to be contacted if any cultural resources were identified. Bob Burns of the Wintu Cultural Council responded by phone on May 23, 2006, and indicated that he is not concerned and does not anticipate cultural resources within the proposed Project and/or APE as the area has been highly disturbed by historic activities. James Hayward, Sr., of the Redding



Rancheria, responded by letter on May 15, 2006, indicating that he had concerns regarding ethnographic Wintu encampments along the west side of the Sacramento River.

A second, more detailed letter was sent to James Hayward, Sr. on May 17, 2006, describing the proposed Project, inviting him for a site visit, and requesting feedback regarding the treatment of artifacts. Follow-up emails and phone calls to Mr. Hayward as recently as December 8, 2008, have not resulted in a request from him for a site visit. No other responses were received.

PALEONTOLOGICAL RESOURCES

Two geologic formations underlay the proposed Project site: 1) meta-volcanic rock belonging to the Copley Greenstone Formation; and 2) the Red Bluff Formation. The following describes both formations' fossil bearing potential:

Copley Greenstone Formation¹

The parent rocks of the Copley Greenstone were originally placed during the Devonian period, which had significant plate tectonic activity as continents drew closer. Activity on the west coast of North America (currently Idaho and Nevada) was generally passive, with formations of river deltas and estuaries. Not until the late Devonian period did the western shores of North America begin to see the early beginnings of continental drift and the formation of mountains known today.²

The Devonian period had high sea levels and gave rise to many marine organisms, including brachiopods, corals, bony fish, the first jawed fishes and some of the first sharks. In the United States, the significant fossil beds of the Devonian period are found in the Midwest and central eastern portions of the country, where ocean levels and terrain provided opportunities for fossils to be created. In the western United States (California, Oregon) sea life that may have been persevered on the ocean floor during the Devonian period was significantly altered during the creation of the Sierra and Cascade mountains starting in the late Devonian period and into the Mississippian period. During these periods, uplifting of the continent (through plate tectonics and subsequent volcanism) ground and superheated these sediments and volcanic rocks altering their composition and formed materials such as the Copley Greenstone, found near Redding, California. The Copley Greenstone consists of the metamorphosed andesitic and basaltic volcanic rocks which were placed in the inland seas of the Devonian period.

This formation, while laid down during a period of abundant sea life and potential fossilization, have been altered to the point that they are not generally associated with abundant fossilization. While fossils could be found in the Copley Greenstone formation, they are not recognized as a significant source of fossils, and have little, if any paleontological resources present.

¹<http://www.ucmp.berkeley.edu/devonian/devlife.html>.

²Ogg, Jim; June 2004, Overview of Global Boundary Stratotype Sections and Points (GSSP's) <http://www.stratigraphy.org/gssp.htm>.



Red Bluff Formation^{3, 4}

The Red Bluff Formation was created during the Pleistocene epoch of the Quaternary period, a relatively recent formation in geologic time that lasted up to approximately 10,000 years ago. The Pleistocene saw significant land form changes as a result of the ice ages that spread over North America. The Pleistocene had many significant species including conifers, flowering plants, insects, birds, mollusks, bison, saber-toothed cats and mammoths. Significant fossils are found in the Pleistocene age rocks in various locations around California, with the most notable being the La Brea Tar Pits near Los Angeles.

The Red Bluff Formation is comprised of very coarse gravels with minor amounts of interstratified sand and silt that, in the Salt Creek area, were derived from the metamorphic rocks of the Coast Range Mountains and the Klamath Mountains. Development of the Red Bluff Formation is relatively recent in geologic time, and the presence of fossils is a minor component of the formation, and are typically gastropods (clam type animals). Depending on the location of these fossils, they may have been covered by silts and sediments from the outwash of river channels, or deposited from other locations by alluvial deposits from adjacent mountains. While fossils can be found in the Red Bluff Formation, the presence of fossils is not considered significant.

Paleontological Records Search

Existing paleontological and geological sources were reviewed by the U.C. Berkeley Museum of Paleontology (UCMP Vertebrate Paleontological Locality Database, 2009) and found no record of previous paleontology findings for the Project site or surrounding area.

5.8.4 REGULATORY FRAMEWORK

FEDERAL REGULATIONS

The National Register of Historic Places (NRHP) is “an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation’s cultural resources and to indicate what properties should be considered for protection from destruction or impairment.” However, the Federal regulations explicitly provide that National Register listing of private property “does not prohibit under Federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property.”

The objective of the survey, as outlined by the City of Redding, is to identify and evaluate any “historic properties” or “historical resources” that may exist within or adjacent to the SPA. “Historic properties,” as defined by the Advisory Council on Historic Preservation, include any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior” (36 CFR 800.16(1)). The eligibility for inclusion in the National Register is determined by applying the following criteria, developed by the National Park Service as per provisions of the National Historic Preservation Act:

³<http://www.ucmp.berkeley.edu/quaternary/ple.html>.

⁴Gibbard, P. and van Kolfschoten, T. (2004) "The Pleistocene and Holocene Epochs" Chapter 22, Gradstein, F. M., Ogg, James G., and Smith, A. Gilbert (eds.), *A Geologic Time Scale 2004*, Cambridge University Press, Cambridge.



The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- that are associated with events that have made a significant contribution to the broad patterns of our history; or,
- that are associated with the lives of persons significant in our past; or,
- that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4).

STATE REGULATIONS

California Register of Historical Resources

In 1992, the Governor signed AB 2881 into law establishing the California Register of Historical Resources (CRHR). The California Register is an authoritative guide in California used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The criteria for eligibility for the California Register are based upon the National Register criteria. Certain resources are determined by the statute to be included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places, State Landmarks, and State Points of Interest.

The State Office of Historic Preservation (OHP) has broad authority under Federal and State law for the implementation of historic preservation programs in California. The OHP makes determinations of eligibility for listing on the National Register of Historic Places and the California Register of Historical Resources.

California Public Records Act

Sections 6253 and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (CPRA; Government Code § 6250 et. seq.) and California's open meeting laws (The Brown Act, Government Code §54950 et. seq.) protect the confidentiality of Native American cultural place information. The CPRA (as amended, 2005) contains two exemptions that aid in the protection of records relating to Native American cultural places by permitting any state or local agency to deny a CPRA request and withhold from public disclosure:

- "records of Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects described in Section 5097.9 and 5097.993 of the Public Resources Code maintained by, or in the possession of, the Native American Heritage Commission, another state agency, or local agency" (GC § 6254(r)); and



- “records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, another state agency, or local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency” (GC § 6254.10).

Likewise, the Information Centers of the California Historical Resources Information System maintained by the Office of Historic Preservation prohibit public dissemination of records search and site location information. In compliance with these requirements, and those of the Code of Ethics of the Society for California Archaeology and the Register of Professional Archaeologists, the locations of cultural resources are considered restricted information with highly restricted distribution and are not publicly accessible.

California Environmental Quality Act (CEQA)

For CEQA compliance considerations, the PRC establishes the definition and criteria for “historical resources,” which require similar protection to what NHPA §106 mandates for historic properties. “Historical resources,” according to PRC §5020.1(j), “includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.” More specifically, State *CEQA Guidelines* state that the term “historical resources” applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 California Code of Regulations (CCR) §15064.5(a)(1)-(3)).

Regarding the proper criteria for historical significance, State *CEQA Guidelines* mandate that “a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- 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.
- Has yielded, or may be likely to yield, information important in prehistory or history.

The significant of paleontological resources is evaluated using state guidelines. State *CEQA Guidelines* indicate that a project could have a significant effect on the environment if project activities disrupt or adversely affect a paleontological site (CEQA, Appendix G).

California Public Resources Code

The California Public Resources Code, §5097.5, prohibits the excavation or removal of any "vertebrate paleontological site, or any other archaeological, paleontological or historical feature, situated on public



lands, except with the express permission of the public agency having jurisdiction over such lands." Public lands are defined as lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation. Any unauthorized disturbance or removal of archaeological, historic, or paleontological materials or sites located on public lands is considered a misdemeanor.

CITY OF REDDING

City of Redding General Plan

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of Projects on cultural resources. Applicable goals relative to the proposed Project within these elements are listed in Table 5.8-1, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR CULTURAL RESOURCES, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.

TABLE 5.8-1
Consistency Analysis with City of Redding General Plan
Goals and Policies for Cultural Resources

General Plan Goals, Policies, and Objectives	Analysis
<i>Goal NR12: Protect and enhance historical and culturally significant resources within the planning area.</i>	
<i>Policy NR12A: Ensure protection of prehistoric, cultural, and archaeological resources during the development process.</i>	A cultural resources analysis was conducted for the proposed Project. Cultural resources were found on the Project site during investigations. Mitigation measures in this section would bring the proposed Project in compliance with this policy.
<i>Policy NR12B: Refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Northeast Information Center at Chico State University.</i>	A cultural resources analysis was conducted for the proposed Project, including a records search at the Northeast Information Center. Cultural resources in the Project area were adequately investigated and mitigation measures in this section would either protect cultural resources or recover their data potential.
<i>Policy NR12C: Encourage public and private efforts to identify, preserve, protect and/or restore historic buildings, structures, landmarks, and important cultural resources.</i>	Cultural resources were found on the proposed Project site during investigations, but there are no historic buildings on the proposed Project site. Mitigation measures in this section would bring the proposed Project in compliance with this policy.
<i>Policy NR12D: The City shall not knowingly approve any public or private Project that may adversely affect any archaeological site without first consulting the Archaeological Inventory, Northeast Information Center, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix "K" of the CEQA Guidelines.</i>	A cultural resources analysis was conducted for the proposed Project, including a record search at the Northeast Information Center. Cultural resources were found on the proposed Project site during investigations. Mitigation measures in this section would bring the proposed Project in compliance with this policy.

Source: *City of Redding General Plan, 2000.*



5.8.5 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

Appendix G of the State *CEQA Guidelines* contains the Initial Study Environmental Checklist form. The Initial Study includes questions relating to cultural resources. The issues presented in the Initial Study Checklist have been utilized as thresholds for significance in this section. Accordingly, a Project may create a significant environmental impact if the Project site would:

- Cause a substantial adverse change in the significance of a historical resource as defined in State *CEQA Guidelines* §15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to State *CEQA Guidelines* §15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
- Disturb any human remains, including those interred outside of formal cemeteries feature.

The appropriate evaluation standard is defined in Public Resources Code (PRC) §5020.1 (q) and §21084.1, which defines "substantial adverse effect" as demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

5.8.6 IMPACTS

The purpose of this analysis is to identify any potential cultural resources within or adjacent to the proposed Project, and to assist the Lead Agency (City of Redding) in determining whether such resources meet the office definitions of "historical resources," as provided in the California PRC, in particular CEQA. Cultural resources impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

HISTORIC / PREHISTORIC RESOURCES

5.8-1 IMPLEMENTATION OF THE PROPOSED PROJECT MAY CAUSE A SIGNIFICANT IMPACT TO HISTORIC OR PREHISTORIC RESOURCES.

Impact Analysis: As a result of the pedestrian survey, nineteen cultural resources were discovered which can be divided into six groups. Prehistoric resources include the Wheel-Rut Scatter site and several prehistoric isolates. Historic resources include the Eureka Tellurian Gold Mining Complex (ETGMC) including a variety of historic mining-related locales and features, encompassing the entire Project area; the Shack Site, consisting of a mixed temporal scatter of historic and contemporary material; nine historic trash scatters; and, two residential structure. A more detailed description of resources identified within the Project area is provided below.



Historic Resources

Historic resources recorded within the Project area include the Eureka Tellurium Gold Mining Complex, a number of historic trash scatters (TS 01-09), the Shack Site, and two post-1940s buildings. The historic trash scatters (TS 01-09) located within the Project area are the result of convenience dumping. These scatters appear to date post-1950 with most post-1960 or later. Trash scatters 02, 03, and 04 are adjacent to the two houses on the Project site and may be associated with trash disposal by their residents. The remaining scatters have no clear association with a particular household and appear to be the result of one-time convenience dumping. All but one (TS 07) of the scatters have amounts of contamination from later dumping episodes (i.e., mixed time periods) or have been disturbed as a result of continuing use (i.e., vagrants, trash clean-up efforts, utility corridor maintenance, etc.). As a result, these dumps cannot be associated with a significant person or event in national, California, or local history. They do not embody the distinctive characteristics of a type, period, region, or method of construction, represent the work of a master, or possess high artistic values. In addition, the integrity of these sites has been compromised. None of the historic trash scatters have the potential to yield important scientific information. As a result, the identified trash scatters are not considered eligible for inclusion on the NRHP or CRHR. The historic trash scatters identified are therefore not considered "Historical Resources" or "Historic Properties." As such, the historic trash isolates were not recorded and, due to their nature and lack of integrity of association and location, are not considered eligible resources.

The Shack Site

The Shack Site appears to represent two separate periods of use. The sheet metal scatter, trail/road, and terraces identified at the site suggest an earlier utilization, while the shack and trash scatters identified clearly indicate a use after 1970, most likely by homeless people. None of the refuse located at the site provides for an earlier date, and the site may represent the remains of a post-1970s homeless camp. As with the trash scatters, the Shack Site cannot be associated with a significant person or event in national, California, or local history. In addition, the site does not embody the distinctive characteristics of a type, period, region, or method of construction, represent the work of a master, or possesses high artistic values. The integrity of the site is also questionable, and the site has not yielded, nor is not likely to have the potential to yield, important scientific information. Therefore, the Shack Site also is not considered eligible for inclusion on the NRHP or CRHR, and is not considered a "Historical Resource" or "Historic Property."

Eureka Tellurium Mining Complex

The Eureka Tellurium Gold Mining Complex represents the site of a number of episodes from late nineteenth and early twentieth century gold mining activities. These episodes likely include post-1850s placer mining, early-1900s lode mining, and possible reworking of the site for extraction of quartz for flux in the local copper smelters at the turn of the century. The site was likely reworked during the depression era. Activity areas and features identified at the site include ten placer mining areas, five lode mining areas, ditches, trails/roads, rock alignments and retaining structures, concrete features, terraces; tailings, prospect pits and other mining related features. All are common features associated with the commercial aspect of mining and can be found at the numerous mining areas identified throughout western Shasta County. No indicators of residential occupation were identified at the site. Only a limited number of elements that may represent living areas (e.g., terraces, rock foundations) have been identified, and only one area contains household refuse which confirms this type of use. A general lack of historic trash (1850-1910) was identified within these mining areas; however, this may be due to the scouring of the area by local collectors. Recent excavations



were noted at three locations, and some of the holes and back-dirt piles observed at several of the mining areas may be the result of earlier investigations by collectors. This general absence of dateable refuse resulted in difficulty in dating the various features and locales at the site. In addition, later convenience dumping and use of the site by vagrants/homeless people with established camp sites, created additional trash scatters, disturbed existing scatters and features at the site, and generally contaminated many of the earlier historic period resources. The site's constituents and features (e.g., placer mining areas, lode mining areas, Salt Creek Trail, Roads, Trails, tailings) represent historic period structures and features that are commonplace throughout western Shasta County, have moderate to poor integrity, and have few associated dateable artifacts. The site is contaminated by late period temporal features (i.e., roads, structures, camps, and power lines) and refuse (i.e., cans, bottles, appliances, clothing, shoes, and car parts).

The Eureka Tellurium Mining Complex cannot, based on historic research, be associated directly with significant events or persons who have contributed to local, regional, or national history or cultural heritage. The commonplace nature of its constituents and poor integrity precludes it from embodying the distinct characteristics of a type, period, region, or method of construction, or representing the work of a master, or possessing high artistic values. The mining complex is not unique in Shasta County and is not a good example of its type. There are a number of sites directly adjacent to the Eureka Tellurium Gold Mining Complex on private and federal land with a wider variety of structures, features, and artifacts, and with better integrity and temporal association. Site CA-SHA-1450 lies directly north of the Project site. It represents the same time period as the Eureka Tellurium Complex. This resource (CA-SHA-1450) has a far wider range of features and structures, with better integrity of setting and design. It contains a large collection of temporally sensitive artifacts and does not have the contamination caused by dumping and homeless use noted at the Project site. It also has federal protection under §106 and §110 of the NHPA (36 CFR Part 800).

Investigations to date at the Eureka Tellurium Mining Complex have not identified any components that would yield important historical information. In addition, the limited range of features and artifacts at the site, coupled with its loss of integrity, limit its potential to yield information important to the history of the local area, California, or the nation. Although there is the potential for buried deposits at some site loci, such deposits would not likely yield any significant information that is not already in the historical record or contained in deposits at other similar sites. The Eureka Tellurium Gold Mining Complex does not appear to meet the definition of "Historical Resources" or "Historic Properties." As such, the Eureka Tellurium Gold Mining Complex is not considered a resource eligible for listing on either the National Register of Historic Places or the California Register of Historical Resources. It is therefore not considered to be a "Historical Resource" under CEQA or a "Historic Property" under §106 of the NHPA.

Buildings at 4504 and 4466 Eureka Way

Two structures may potentially be impacted by the Project. The house at 4504 Eureka Way is within the Project area, but will not be directly affected by the Project; the house at 4466 Eureka Way is not within the Project area, nor will it be directly affected; however, the Project proposes to construct an access road between the two structures. Because of the potential for the road to impact the historical setting of these structures, the structures were further evaluated.

The buildings identified at 4466 Eureka Way and 4504 Eureka Way do not appear eligible for listing on the NHPA or CRHR under any of the applicable criteria. Under Criterion a/1, although may be associated with the late 1930s Depression Era and early 1940s expansion of the City of Redding, they are not significant contributors to those events, nor are they associated with any persons important in history (Criterion b/2).



Under Criterion c/3, these residences are typical example of a common resource type—inexpensive modest housing on the outskirts of a small rural Northern California town, many of which can be seen today in older residential areas on the west side of Redding. They are not the work of a master, nor do they possess high artistic values. Both are lacking in integrity, with significant modern alterations, and in poor condition. Neither of these structures meets register criteria as “Historical Resource” or “Historic Property.”

Prehistoric Resources

One prehistoric site, the Wheel-Rut Scatter, was recorded in the central portion of the proposed Project, extending approximately 150 meters along a road. While Ritter (2006) concludes that information regarding regional, non-obsidian, core-flake industries may be obtained from these kinds of sites, the Wheel-Rut Scatter has no dateable elements, contains a limited a range of artifacts, has no subsurface deposit (surface only), and is too disturbed for it to address any meaningful research topics of national, regional or local importance. It does not, therefore, qualify under National Register criterion (d) nor the California Register criterion (4) or any of the other Register criteria. The scatter’s location within a graded access road, as well as stratigraphic evidence of soil disturbance to a depth of 12 centimeters or more, indicate that this site does not possess the integrity necessary to be considered an eligible site. Further, the broken, native tool stone located within the road bed and native soil matrix adds an additional contamination to the site’s constituency. Many of the cultural items identified at the site were later discarded after analysis determined them to be native materials that had been broken by mechanical means (i.e., road grading). Therefore, the Wheel Rut Scatter does not meet the criteria to be considered a "Historical Resource" or "Historic Property." All remaining prehistoric resources, due to their nature as isolated artifacts, are not considered sites eligible for listing as "Historic Resources" or Historic Properties."

The Wheel-Rut Scatter, prehistoric isolates, the Eureka Tellurian Gold Mining Complex, the Shack Site, historic trash scatters, and two structures have all been evaluated and determined not significant. As such, these sites are not considered "Historic Properties" or Historical Resources." The Project will therefore have no effect on sites or structures eligible for listing on the National Register of Historic Places or California Register of Historical Resources. It should be noted that the majority of the proposed development is restricted to the plateau in areas with slopes of less than 20 percent. Sites TS 01-09, the Wheel-Rut Site and approximately fifty percent of the DS 1 ditch system RD 1 and 2 would be removed by the construction of the proposed development. The remaining portion of the Project area, or “Undeveloped Area,” which includes slopes greater than 20 degrees and the area along Salt Creek and Gold Run Creek, is proposed as unimproved open space. Work in this area would be limited to vegetation thinning for fire prevention purposes up to 200 feet from the planned structures and uses of some of the existing seasonal drainages to capture storm-water runoff.

Natural Resources Element Goal 12 of the *General Plan* was developed to "Protect and enhance historical and culturally significant resources within the planning area." Policy NR12A implements this goal by stating that it is the City's policy to "Ensure protection of prehistoric, cultural and archaeological resources during the development process." The *General Plan* EIR states that this policy and related policies mitigate the potential impacts of new development in areas which may contain important archaeological, historical, or paleontological resources. Measures such as testing of any resources found as a result of Project development would reduce potential impacts on undocumented resources to less than significant levels. To minimize potential impacts to prehistoric and historic resources, MM 5.8-1a is required.



It should also be noted that identification of cultural resources for the proposed Project was undertaken in accordance with CEQA and §106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800). Initial work in 2006 focused on inventorying cultural resources within the proposed Project footprint at that time; however, additional development areas potentially affected by the Project were identified in 2008. These areas were required for vegetation clearance and to meet the requirements of Section 404 of the Clean Water Act (CWA) and an associated permit from U.S. Army Corps of Engineers (Corps). If the Corps forwards the determination of "No Historic Properties Effected" to the State Historic Preservation Office (SHPO), and if the SHPO concurs with this determination, then the Corps will be in compliance with 36 CFR 800 regulations; however, it is recommended that strict adherence to California Health and Safety Code §7050.5 and §5097.98 of the Public Resources Code (as amended by Assembly Bill 2641) be followed in the event that human remains are encountered as a result of Project development, as addressed below in MM 5.8-1b.

Mitigation Measures:

- MM 5.8-1a Should any previously unevaluated cultural resources (i.e., burnt animal bone, midden soils, Projectile points or other humanly-modified lithics, historic artifacts, etc.) be encountered, all earth-disturbing work shall cease within 50 feet of the find until a qualified archaeologist can make an assessment of the discovery and recommend/implement mitigation measures as necessary. This stipulation does not apply to those cultural resources evaluated and determined not Historical Resources/Historic Properties.
- MM 5.8-1b If human remains are discovered during development of the proposed Project, all activity shall cease immediately, the Contractor shall notify the Shasta County Coroner's Office immediately under state law, and a qualified archaeologist and Native American monitor shall be contacted. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission shall be contacted pursuant to Public Resources Code §5097.98.

Level of Significance: Less than significant impact with mitigation incorporated.

PALEONTOLOGICAL RESOURCES

5.8-2 *IMPLEMENTATION OF THE PROPOSED PROJECT COULD RESULT IN THE POTENTIAL DAMAGE OR DESTRUCTION OF UNDISCOVERED PALEONTOLOGICAL RESOURCES.*

Impact Analysis: A pedestrian field survey of the proposed Project and record searches did not identify any evidence of paleontological resources on or within the vicinity of the Project site. In addition, both the Copley Greenstone and Red Bluff formations do not have the potential to yield significant paleontological resources. Any undocumented prehistoric resources encountered during Project development activities would be protected in accordance with MM 5.8-1a, above.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



CUMULATIVE IMPACTS

5.8-3 IMPLEMENTATION OF THE PROPOSED PROJECT, ALONG WITH ANY FORESEEABLE DEVELOPMENT IN THE PROJECT VICINITY, WOULD NOT RESULT IN CUMULATIVE IMPACTS TO CULTURAL RESOURCES.

Impact Analysis: Potential impacts would be site-specific and would be evaluated on a project-by-project basis. Each incremental development would be required to comply with all applicable state, federal, and City regulations concerning preservation, salvage, or handling of cultural resources. In consideration of these regulations, potential cumulative impacts on cultural resources would not be considered significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



5.9 PUBLIC SERVICES AND UTILITIES

This section focuses upon public services, utilities, and service systems. Public services comprise fire protection, police protection, and schools. Utilities and service systems comprise wastewater, water distribution, solid waste, natural gas, and electricity. The potential impacts on public service and utility agencies were evaluated based, in part, on correspondence with the local service and utility agencies that serve the Project area. This section provides baseline information on, and evaluates potential impacts on, public services and utilities practices and policies related to the proposed Project. Discussion of existing and future water demand is based on the *Water Supply Assessment*, dated June 2009, contained in Appendix 15.10, SB-610 WATER SUPPLY ASSESSMENT.

5.9.1 ENVIRONMENTAL SETTING

FIRE PROTECTION

Fire protection within the proposed Project area is provided by three primary agencies. These include the Redding Fire Department (RFD), California Department of Forestry and Fire Protection (CDF), and the Shasta County Fire Department (SCFD). The Redding Fire Department has the primary responsibility for providing fire protection and emergency services response within the City limits. A mutual aid agreement is in effect with CDF during the wildland fire season for wildland and structure fires within a one-mile fringe area surrounding the City. An automatic aid agreement with the Shasta County Fire Department is also in effect for structure fires outside of the wildland fire season. Under this agreement, the Redding Fire Department responds within a one-mile fringe area surrounding the City and to county islands. Shasta County Fire Department responds to a small geographic area on the east side of the City.

Redding Fire Department

The Redding Fire Department is a full-service fire department providing responses to fires, medical emergencies, hazardous materials spills or public assistance requests. RFD has three main divisions: Administration, Operations, and Fire Prevention. RFD operates from seven stations and a Fire Headquarters at City Hall. The closest RFD station to the proposed Project is Fire Station Number 2, located at 3491 Placer Street, approximately 1.5 miles from the proposed Project. The station is currently staffed with two firefighters 24 hours a day, seven days a week, and houses one Type I fire engine.¹

RFD average response time for all emergency responses within the proposed Project area is four to five minutes.² According to RFD, calls for service continue to grow. From 2006 - 2007, there was a six percent increase in calls for Fire Station 2.³ RFD responded to 11,427 calls in 2006 with the following breakdown: 9,037 emergency medical service calls; 529 fire; 245 hazardous material; and 1,616 public assistance.⁴ The RFD Insurance Office Rating (ISO) is three (the ISO rating systems ranks fire protection and sets insurance rates on a scale from one to 10 with one being the highest 10 the lowest).⁵

¹ Letter from the City of Redding Fire Department, dated 9/23/2008.

² Ibid.

³ Ibid.

⁴ *Redding Fire Department Annual Report 2006*. <http://www.ci.redding.ca.us/fire/documents/2006AnnualReport.pdf>, viewed on 9/24/2008.

⁵ Letter from the City of Redding Fire Department, dated September 5, 2008.



Primary funding for the RFD is through the City of Redding General Fund. Additional funding is through the Fire Facility Impact Fee. The 2008 rates are \$588 per single-family home and \$468 per multi-family unit. The 2009 rates are currently at \$825 per single-family home and \$655 per multi-family unit.⁶ The total number of units for the proposed Project is 440, which includes 248 single-family homes, 96 clustered single family homes, and 96 apartments (multi-family units). The total Fire Facility Impact Fee for the proposed Project in 2008 would be \$247,20, and \$343,240 in 2009. The total Fire Facility Impact Fees were derived by multiplying the number of units by their respective rate and then adding the single-family total to the multi-family total.

Shasta County Fire Department

Shasta County Fire Department (SCFD) contracts with the California Department of Forestry and Fire Protection (CDF) to manage and over see the operation of the SCFD. The Shasta County Volunteer Fire Department is made up of 19 volunteer fire companies. These companies provide fire protection and medical assistance to the citizens of their communities, donating thousands of volunteer hours to the safety and well-being of their neighbors. Station 53 is the closest fire company to the proposed Project, which is located on School Road in the town of Keswick. In 2007, Station 53 responded to 115 calls. Station 53 houses a type II engine, E-53, a type III engine, E-553, and Rescue Unit 53. This station is one of six stations in Battalion 5 of the SCFD. Battalion 5 is comprised of five volunteer companies, six volunteer stations, and 19 pieces of apparatus. Additionally there are three CAL FIRE stations with four pieces of apparatus that are staffed during the fire season, while one CAL FIRE engine is staffed year round within Battalion 5.⁷

California Department of Forestry and Fire Protection

The CDF provides wildfire protection to undeveloped forested areas of the Sierra Nevada. The CDF is largely concerned with the prevention and control of wildland fires, and deterring the spread of fires into developed areas. Although the CDF does not normally respond to structure fires, CDF provides protection to structures threatened by forest fire. Other sources of fire protection that could be called upon to serve the site include the U.S. Forest Service and other Shasta County Fire Protection Districts.

LAW ENFORCEMENT SERVICES

City of Redding Police Department

Law enforcement for the proposed Project is provided primarily by the City of Redding Police Department (RPD), whose closest station in relation to the proposed Project is located at 1313 California Street. The Department has 130 full time employees: 115 sworn officers and 15 community service officers, and serves a total of 90,491 persons over sixty square miles.⁸ In January 2007, the ratio of sworn police officers per 1,000 residents was 1.32 for the RPD, while the California state average was 2.04, and the national average was 2.41 per 1,000 residents.

The Department is divided into three divisions: Investigations, Administration, and Field Operations. The Investigations Division conducts follow-up criminal investigations on all felony and select misdemeanor

⁶ Ibid.

⁷ Shasta County Fire Department 2007 Annual Report. http://www.co.shasta.ca.us/html/SC_Fire/docs/scfd_07_annual_report.pdf, viewed on 9/24/2008.

⁸ Letter from the City of Redding Police Department, dated September 2, 2008.



crimes reported to the Police Department. Typically, a uniformed police officer responds to a call for service and prepares a police report, which may require follow-up investigation. A Police Investigator is then assigned to conduct the follow-up, often requiring many hours of investigation before an arrest is made or a case is closed. The Administrative Services Division consists of two main units (administrative, and services) with many specialized sub-units that provide service and support to the public and the rest of the Department. The Field Operations Division is the "back-bone" or fundamental service delivery team of the police department. It comprises all the personnel one sees in uniform usually driving marked police vehicles. This division accounts for over 70 percent of the police department's measurable workload.

The RPD 2008 Mid-Year Report provides statistics for the months of January through June. In January through June, 2008, the RPD responded to 42,335 calls for service, and 42,452 calls for service in January through June, 2007. The average response time to areas within the proposed Project is 11 minutes and 18 seconds.⁹ The RPD anticipates the proposed Project will impact their services because the proposed Project expands their area of service. Additionally, the RPD foresees potential for an increase in calls for service. It is anticipated by the RPD that response time will increase as a result of the proposed Project.

The RPD has established a geographic based "beat" system to respond to calls for service. There are currently six "beats" covering the City's 60 square mile area. A "beat" is based upon population density, calls for service, traffic load, and response times. The proposed Project is located in Beat 5.¹⁰

Shasta County Sheriff's Office

The City of Redding has a mutual-aid agreement with the Shasta County Sheriff's Department. The Sheriff's Office, therefore, may also respond to certain emergencies at the proposed Project. The Sheriff's Office is located at 1500 Court Street, approximately 2.3 miles east of the proposed Project. The Patrol Division of the Sheriff's Office is divided into three units: CSL/North County, South County and Burney. The South County Station would be responsible for the dissemination of services to the proposed Project. The South County station has ten vehicles, two vehicles equipped for K-9 services, a bomb disposal vehicle, and Search and Rescue vehicles assigned to the Office of Emergency Services Unit.

Jail/Detention Facilities

The County Sheriff Department operates jail/detention facilities in the City. The Shasta County jail is a high security local detention facility used for the detention of persons pending arraignment, during trial, and upon a sentence of commitment. This facility can hold up to 381 prisoners; 317 males and 64 females. The facility is attached to the Justice Center, the Municipal and Superior Courts of Shasta County and is located at 1655 West Street, Redding. The Main Jail facility continues to be an ever-changing, increasingly more efficient component of the Sheriff's Office. The Shasta County Jail Remodel Project (Phase I), which was completed in 1999, was in full use in May 2000. The Custody Division personnel and administration strive to work together to improve the efficient operation of the facility and to provide continual upgrades, enhancing the facility's use to the community it serves.

⁹ Letter from the City of Redding Police Department, dated September 2, 2008.

¹⁰ City of Redding GIS Interactive Map, <http://maps.ci.redding.ca.us/pub/mapFrame.cfm>, accessed September 11, 2008.



SCHOOLS

The proposed Project would be served by the following school districts: the Shasta Union High School District for grades 9-12, the Shasta Union Elementary School District for grades K-8, and the Redding School District for grades K-8.

Shasta Union High School District

The Shasta Union High School District (SUHSD) provides public school services for grades 9-12. The School District has more than 6,300 students and 275 teachers.¹¹ The SUHSD has six high schools, one adult school, and three charter schools. The nearest high school to the proposed Project is Shasta High School, which is located at 2500 Eureka Way in Redding, approximately 1.7 miles east of the proposed Project.

Operating funds are provided through the SUHSD's base revenue limit per student Average Daily Attendance (ADA). Capacity facility funds needed to construct and rehabilitate facilities and to accommodate new students are available from developer impact fees. In addition, fifty percent matching funds are available from the State School Facility Program, subject to availability, eligibility and priority points, and General Obligation Bonds.

Anticipated funding for new facilities would come from the State School Facility Program (Grant Program) when eligible, if available, and if the SUHSD has sufficient priority points. The Grant Program will also cover half the cost of the site and its development. The remainder must be matched by the SUHSD through its Developer Fees or other means. Because developer fees are payable upon issuance of building permits, fee revenue is dependent on construction activity which will in all probability spread out over a period of time. Additionally, State School Facility Funds are subject to cash flow and political delays.

Shasta Union Elementary School District

The Shasta Union Elementary School District (SUESD) is a one-school district serving students from kindergarten through eighth grade.¹² Specifically, Shasta Union serves the following grades and programs: grades kindergarten through fifth grade; a Montessori Program serving grades kindergarten through sixth grade; after school childcare; preschool; and the Redding School District serves grades sixth through eight at Shasta Union.¹³ Shasta Union Elementary is located at 10446 Red Bluff Road in the town of Shasta, approximately three miles from the proposed Project. Current enrollment at Shasta Union Elementary is 187 students.¹⁴

According to the SUESD, the state average for student generation rates per dwelling unit is 0.5. An estimation of 410 dwelling units is located inside Shasta Union Elementary School boundaries. Therefore, the impact of approximately 205 students will require additional facilities to prevent overcrowding. Additionally, the District participates in the K-3 Class Size Reduction (CSR) Program where funding eligibility requires a teacher student ratio of 1:20. The addition of approximately 205 students will require additional facilities for the District to maintain its eligibility.¹⁵

¹¹ Education Data Partnership, www.ed-data.k12.ca.us viewed on November 11, 2008.

¹² Ibid.

¹³ Letter from the Shasta Union Elementary School District, November 21, 2008.

¹⁴ Ibid.

¹⁵ Letter from the Shasta Union Elementary School District, November 21, 2008.



Redding School District

The proposed Project is also located within the Redding School District (RSD). Manzanita Elementary, located at 1240 Manzanita Hills Avenue in Redding, is approximately 1.5 miles from the proposed Project. Manzanita Elementary School has a current enrollment of 630 students, and serves the following grades and programs: kindergarten through fifth grade; preschool; and after school childcare. Sequoia Middle School is located at 1805 Sequoia Street in Redding and is approximately 1.5 miles from the proposed Project. Sequoia Middle School has a current enrollment of 776 students, and serves the following grades and programs: grades fourth through eighth; District Home School for grades K-8; after school program; jazz band; indoor and outdoor athletic programs; and GATE.¹⁶

According to the RSD, the state average for student generation rates per dwelling unit is 0.5. An estimated 30 dwelling units is located inside Redding School District boundaries. The potential impact may be as low as 15 additional students; however, Shasta County offers "parent choice" for enrollment, where parents are given the choice to enroll their child outside of their residential boundaries, which could double or triple enrollment projections.¹⁷

As with the SUESD, the RSD participates in the K-3 Class Size Reduction (CSR) Program and funding eligibility requires a teacher student ratio of 1:20. If the projected enrollment at Manzanita Elementary is greater than projected, then limited facilities space could be impacted. The District has no additional funding and/or State eligibility for lack of educational facilities and staffing at Manzanita Elementary School.¹⁸

PARKS AND RECREATION

Redding's parks system is over 50 years old, back to when parks were first being recognized locally for their benefit to the community. There are currently 41 City-owned and maintained parks and nine school-park sites. These sites encompass primarily developed land and total 225 acres. The parks include over 22 playgrounds and a water play area, plus provide facilities for picnicking, walking, boating, fishing, basketball, softball, baseball, volleyball, soccer, tennis, disc golf, horseshoes, skateboarding, roller hockey, aquatics, and off-leash dog play. There are five types of parks located throughout Redding: neighborhood parks, community parks, school and park joint-use sites, dog parks, and community gardens. Mary Lake Park, located at 1696 Lakeside Drive and encompassing 29.59 acres, is the nearest public park facility/natural area to the proposed Project.

The Recreation Element of the *General Plan* states in Goal R4 that 10 acres of parkland are recommended per 1,000 residents. This is achieved through a combination of the City's *Subdivision Ordinance* land dedication requirements as allowed by the State Map Act (Quimby Act) and other City parks funding programs (e.g., grants, use of General Fund, park development fees collected with building permits, gifts). The *Subdivision Ordinance* allows for a maximum land dedication requirement from a subdivision project of 531 square feet per dwelling unit. This achieves five acres per 1,000 population. This meets the neighborhood park needs for the subdivision. The remaining five acres to achieve the 10 acre per 1,000

¹⁶ Letter from the Redding School District, November 21, 2008.

¹⁷ Ibid.

¹⁸ Ibid.



population goal comes from City community wide parks and facilities such as Caldwell Park, the Sacramento River Trail, the Aquatic Center, funded from the sources noted above.

Another source is a project such as the proposed Salt Creek Heights project where the land dedication requirement exceeds the subdivision ordinance standard. The proposed 13.9 acre park would be designated as a large neighborhood park serving the immediate neighborhoods within 0.5 miles.¹⁹ The *General Plan* defines neighborhood parks as fully developed parks which typically contain a variety of active recreational facilities such as playgrounds, picnic areas, basketball or tennis courts, and open play areas. The proposed Project will be required to connect with an existing off-site trail to the Sacramento River Trail and provide a contribution to the trail program in-lieu of capacity enhancements to the existing Buenaventura Trail.²⁰

Parks, Trails and Open Space Master Plan

The City of Redding *Parks, Trails and Open Space Master Plan* represents a comprehensive planning effort to guide future recreation development and natural area conservation in the Redding area.²¹ The topography and natural setting of Redding, including the Sacramento River and its numerous tributary creeks, provide outstanding opportunities for bicycle and pedestrian travel.²² The proposed Project would connect to the Buenaventura Trail via the proposed Project's Buenaventura Boulevard extension.

LIBRARY SERVICES

Shasta County provides library services throughout the County, including in the City of Redding. The County has three library branches: the Burney Branch Library (located at 37038 Siskiyou Street), the Anderson Branch Library (located at 3200 West Center Street), and the Redding Branch Library (located at 1100 Parkview Avenue). The Burney Branch Library opened in 1949, and was the first of the Shasta County library branches. The Redding Branch library is the most recent library addition, having opened on March 3, 2007.

PUBLIC TRANSPORTATION

Redding Area Bus Authority

The Redding Area Bus Authority (RABA) provides Fixed Route, Express Route, and Demand Response services within the urbanized area of Shasta County.²³ RABA operates 11 fixed routes within the cities of Redding, Shasta Lake and Anderson, in addition to some unincorporated areas. All of the fixed routes operate on one hour headways except Route 9 which operates on a two hour headway.²⁴ In total, 13 heavy duty, 30- and 35-foot transit buses are required for peak service.²⁵ Route 2, an existing fixed route, currently passes through the intersection of Eureka Way and Buenaventura Boulevard, which is near the southeast boundary of the proposed Project. Expansion of Route 2 services would be considered as the Project is built

¹⁹ Letter from the City of Redding Community Services Department, dated August 22, 2008.

²⁰ Ibid.

²¹ City of Redding Parks, Trails and Open Space Plan Homepage, <http://www.ci.redding.ca.us/comsrv/pmp/index.htm>, viewed on October 1, 2008.

²² City of Redding *General Plan*.

²³ Redding Area Bus Authority Homepage, <http://www.ci.redding.ca.us/raba/rabahome.htm>, viewed on October 1, 2008.

²⁴ *Redding Area Bus Authority Short- and Long-Term Master Transit Plan Study*, dated July 24, 2001.

²⁵ Ibid.



out and the demand for services is warranted. Street design within the subdivision will accommodate bus turnouts at strategic locations as determined through final plan review.

WATER SUPPLY ASSESSMENT

The proposed Project site is undeveloped land that was used many years ago for mining purposes. The only current uses of the site include access roads for an electrical utility corridor and maintenance roads. As a result, there is no existing water use on-site.

As discussed in Section 3.0, PROJECT DESCRIPTION, approximately 756 acres of the surrounding area, including the Project site, was annexed to the City in December 1987. The annexation included properties in the Shasta Community Services District (CSD), which is a water-providing agency. There was not, however, a formal detachment action taken; therefore, a few properties exist in both the Shasta CSD and the City of Redding water service boundary. To eliminate any potential confusion over the service provider for the proposed Project, the Project Applicant requested a detachment from the Shasta CSD and expressed the intent to receive water service from the City of Redding. On September 21, 2006, the CSD Board tentatively agreed to the detachment, pending an interim service agreement with the City. Now that the Project Applicant has confirmed intent to proceed with the proposed Project, interim service agreement is being drafted, and the detachment will be brought forth to the Shasta County Local Agency Formation Commission (LAFCo) prior to Project development. Thus, for the purpose of the water supply analysis and discussion, the City of Redding Water Utility (RWU) is assumed to be the water purveyor to the proposed Project.

RWU was formed in 1937 and has expanded through a merger with the former California Water Service Company in 1941. The most recent documents prepared by RWU addressing water supply are its 2000 and 2005 *Urban Water Management Plan (UWMP)*. RWU operates a water distribution system supplied by surface water from the Sacramento River via the Foothill Water Treatment Plant, Whiskeytown Lake via the Buckeye Water Treatment Plant, and groundwater from the Redding Groundwater Basin from fourteen wells. Water distributed by RWU serves residential, commercial, industrial, institutional, and irrigation demands. The historic average percentage of supply is 75 percent as surface water and 25 percent as groundwater.²⁶

RWU reflects its most current anticipated water demands in its 2005 UWMP. The UWMP does not specifically cite the proposed Project; however, future demands were anticipated in the UWMP for Year 2025, based on a growth of approximately 2,500 acre feet (AF) every 5 years (equivalent to an annual increase of 500 AF).

Surface Water

The City of Redding receives water from the Sacramento River through an agreement with the United States Bureau of Reclamation (Bureau) that dates back to the year 1886 as established between the Bureau and the California Water Service Company. The contractual right which the City has allows for maximum diversion of 21,000 acre-feet per year (AFY), and the Bureau to reduce supply by 25 percent in a critical year condition at Shasta Lake. The City has a second contract with the U.S. Bureau of Reclamation for water to be served in its Buckeye service area. The contract allows for diversion of up to 6,140 acre-feet (AF) annually from the Whiskeytown Lake. Both contracts were renewed in 2005, with 40 year extensions to March 31, 2045.

²⁶ City of Redding, *Water Master Plan*, 2000.



Redding Groundwater Basin

The Redding Groundwater Basin is an unadjudicated basin underlying the City and its surrounding area in Shasta County. Comprising the Redding Groundwater Basin are the Anderson Subbasin, Enterprise Subbasin, and Millville Subbasin. RWU draws groundwater from the Enterprise Subbasin which is bounded by the Sacramento River to the west and southwest, the Klamath Mountains to the north, and Little Cow Creek and Cow Creek to the east. Natural recharge of the basin aquifer is through infiltration of streamflows and precipitation.

Groundwater Production

Groundwater from the Redding Groundwater Basin is used by RWU to supplement surface water supplies in meeting customer demands. RWU has fourteen wells and draws an average of 8,000 AF per year, and has a maximum considered (per 2005 UWMP) groundwater production of 19,000 AF/year. The wells range in depth from 170 to 600 feet. Annual groundwater production is summarized in Table 5.9-1, AMOUNT OF GROUNDWATER PUMPED, below.

**TABLE 5.9-1
Amount of Groundwater Pumped**

Basin Name	2000	2001	2002	2003	2004
Redding Groundwater Basin 5-6:04 (Enterprise Subbasin)	7,105	7,656	8,324	8,634	8,610
% of Total Water Supply	30%	30%	30%	32%	30%

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

Table 5.9-2, AMOUNT OF GROUNDWATER PROJECTED TO BE PUMPED, below, reflects the projected groundwater production from 2005 to 2025.

**TABLE 5.9-2
Amount of Groundwater Projected to be Pumped**

Basin Name	2005	2010	2015	2020	2025
Redding Groundwater Basin	7,830	8,520	9,240	9,960	10,800
% of Total Water Supply	30%	30%	30%	30%	30%

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

The 2005 UWMP provides the following in regards to estimation of basin capacity/safe yield:

"The California Department of Water Resources (DWR) estimates that 53,200 acre-feet are pumped each year from the Redding Groundwater Basin for urban and agricultural uses. Although the safe yield has not been determined, DWR suggests the potential yield is greater than current usage."



Water Use

RWU summarized its past, current and projected future water use in the 2005 UWMP. The table has been recreated as Table 5.9-3, PAST, CURRENT, AND PROJECTED WATER USE, below, and includes a breakdown of water demand by use sectors.

**TABLE 5.9-3
Past, Current, and Projected Water Use**

Water Use Sectors	1995	2000	2005	2010	2015	2020	2025
Single-Family Residential	12,175	13,522	15,291	16,602	17,961	19,326	29,922
Multi-Family Residential	286	484	543	589	637	685	741
Commercial / Institutional	7,314	7,734	8,760	9,565	10,405	11,245	12,225
Industrial	436	670	752	821	924	996	1,080
Governmental	523	641	727	795	843	915	999
Landscape	16	25	27	28	30	33	33
Total	20,750	23,076	26,100	28,400	30,800	33,200	36,000

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

Water Supply

Current and projected contractual water supply for RWU from 2005 to 2025 is 46,140 AF annually. Table 5.9-4, CURRENT AND PROJECTED WATER SUPPLIES - CONTRACTUAL AND GROUNDWATER SUPPLY, below, was developed from the 2005 UWMP to summarize water supply sources and contractual rights.

**TABLE 5.9-4
Current and Projected Water Supplies - Contractual and Groundwater Supply**

Water Supply Sources	2005	2010	2015	2020	2025
Bureau Redding Contract 14-06-200-2871A	21,000	21,000	21,000	21,000	21,000
Bureau Buckeye Contract 14-06-200-5272A	6,140	6,140	6,140	6,140	6,140
Subtotals (Bureau Contracts)	27,140	27,140	27,140	27,140	27,140
Redding Groundwater Basin	19,000	19,000	19,000	19,000	19,000
Transfers	0	0	0	0	0
Other	0	0	0	0	0
TOTAL WATER SUPPLY	46,140	46,140	46,140	46,140	46,140

Source: RBF Consulting, *Water Supply Assessment*, June 2009.



Normal and Dry-Year Supply Reliability

RWU's water supply has proven highly reliable through the years. Reduction in surface water supply poses the greatest potential impact to annual deliveries. The Sacramento River Contract with the Bureau can be reduced by up to 25-percent of the average quantity taken by the City (measured for the previous three-year period). Similarly, the Buckeye Contract with the Bureau can be reduced by up to 25-percent of the average (measured for the previous five-year period).

From 1964 to 2005, water supply was only reduced twice; in 1992 and 2002. Based on historical data, RWU considers the following cutbacks in delivery most probable:

- No reduction - three out of four years;
- 25-percent reduction - one out of 10 years.

City of Redding's water supply sources are diversified by having surface water and groundwater to meet demands. The Redding Groundwater Basin is a reliable source that RWU can utilize more extensively in critical dry years. Provided below are tables summarizing normal, single dry, and multiple dry year conditions from 2005 to 2020. Table 5.9-5, PROJECTED NORMAL YEAR SUPPLY AND DEMAND, provides for the projected normal year supply and demand from 2010 to 2025.

**TABLE 5.9-5
 Projected Normal Year Supply and Demand**

	2010	2015	2020	2025
Supply Totals	46,140	46,140	46,140	46,140
% of Normal Year	100%	100%	100%	100%
Demand Totals	28,400	30,800	33,200	36,000
% of Year 2005	109%	118%	127%	138%
Surplus	17,740	15,340	12,940	10,140

Notes:
 1. 2005 Demand - Normal Year = 26,100 AF
 2. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

As determined in Table 5.9-4, the City of Redding has an available water supply of 46,140 AF annually. During single- and multi-dry year periods the most severe reduction of water supply would result from a 25 percent reduction to both the Sacramento River and Buckeye Contracts by the Bureau. In the event of such a reduction, the water supply to the City is to be reduced to 39,355 AF. For a thorough evaluation of worst-case water supply scenarios in the future, 39,355 AF is reflected for all single- and multi-dry year supply and demand comparisons made in Tables 5.9-6 through 5.9-10, below. The use of this value is also consistent with an approximate supply percentage of 85 percent of a normal year.

Table 5.9-6, PROJECTED SINGLE DRY YEAR WATER SUPPLY AND DEMAND, provides for the projected single dry year water supply and demand from 2010 to 2025.



TABLE 5.9-6
Projected Single Dry Year Water Supply and Demand

	2010	2015	2020	2025
Supply Totals	39,355	39,355	39,355	39,355
% of Normal Year	85%	85%	85%	85%
Demand Totals	28,400	30,800	33,200	37,120
% of Year 2005	109%	118%	127%	142%
Surplus	10,955	8,555	6,155	2,235

Notes:

1. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

The following tables for multiple dry year conditions reflect total water supply consistent with single year conditions in RWU's 2005 UWMP. Table 5.9-7, PROJECTED MULTIPLE DRY YEAR PERIOD WATER SUPPLY AND DEMAND (2006 - 2010), summarizes the projection of multiple dry year conditions from 2006 to 2010 based on the 2005 UWMP.

TABLE 5.9-7
Projected Multiple Dry Year Period Water Supply and Demand (2006 - 2010)

	2006	2007	2008	2009	2010
Supply Totals	39,355	39,355	39,355	39,355	39,355
% of Normal Year	85%	85%	85%	85%	85%
Demand Totals	26,492	26,889	27,292	27,701	28,400
% of Normal Year	102%	103%	105%	106%	109%
Surplus	12,863	12,466	12,063	11,654	10,955

Notes:

1. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

Table 5.9-8, PROJECTED MULTIPLE DRY YEAR PERIOD WATER SUPPLY AND DEMAND (2011 - 2015), below, provides the projection of multiple dry year conditions from 2011 to 2015 based on the 2005 UWMP.



TABLE 5.9-8
Projected Multiple Dry Year Period Water Supply and Demand (2011 - 2015)

	2011	2012	2013	2014	2015
Supply Totals	39,355	39,355	39,355	39,355	39,355
% of Normal Year	85%	85%	85%	85%	85%
Demand Totals	28,826	29,258	29,697	30,142	30,800
% of Normal Year	110%	112%	114%	115%	118%
Surplus	10,529	10,097	9,658	9,213	8,555

Notes:

1. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

Table 5.9-9, PROJECTED MULTIPLE DRY YEAR PERIOD WATER SUPPLY AND DEMAND (2016 - 2020), below, provides the projection of multiple dry year conditions from 2016 to 2020 based on the 2005 UWMP.

TABLE 5.9-9
Projected Multiple Dry Year Period Water Supply and Demand (2016 - 2020)

	2016	2017	2018	2019	2020
Supply Totals	39,355	39,355	39,355	39,355	39,355
% of Normal Year	85%	85%	85%	85%	85%
Demand Totals	31,262	31,731	32,207	32,690	33,200
% of Normal Year	120%	122%	123%	125%	127%
Surplus	8,093	7,624	7,148	6,665	6,155

Notes:

1. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

Table 5.9-10, PROJECTED MULTIPLE DRY YEAR PERIOD WATER SUPPLY AND DEMAND (2021 - 2025), below, provides the projection of multiple dry year conditions from 2021 to 2025 based on the 2005 UWMP.



TABLE 5.9-10
Projected Multiple Dry Year Period Water Supply and Demand (2021 - 2025)

	2021	2022	2023	2024	2025
Supply Totals	39,355	39,355	39,355	39,355	39,355
% of Normal Year	85%	85%	85%	85%	85%
Demand Totals	33,698	34,203	34,716	35,237	36,000
% of Normal Year	129%	131%	133%	135%	138%
Surplus	5,657	5,152	4,639	4,118	3,355

Notes:

1. Units of Measure: Acre-feet per year

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

WASTEWATER / SEWER SERVICES

The City of Redding is the sole provider of sanitary sewer service for the proposed Project area. The City currently operates and maintains approximately 370 miles of sanitary sewer pipeline, spanning six to 48 inches in diameter, 15 raw sewage lift stations, and two wastewater treatment plants (WWTPs). The City is divided into two major drainage basins: Clear Creek and Stillwater. The proposed Project is located in the Clear Creek Basin, which serves the western portion of the City. Both basins are divided into service areas. Clear Creek Basin includes Redding, North Redding, Cascade, and Enterprise Services Areas. The Project is located in the Redding Service Area. There are no sewer lines currently serving the proposed Project; therefore, there is no existing sewage flow.²⁷ However, the existing sewer system off-site that will ultimately serve the proposed Project area is nearing capacity. It is also anticipated that downstream sewer mains and the Mary Street Pump Station will need to be replaced with larger facilities to serve the proposed Project.²⁸

STORMWATER / STORM DRAINAGE FACILITIES

According to the City of Redding *General Plan*, the Redding Planning Area contains fifteen hydrologic basins. Storm drainage facilities within the City limits are operated and maintained by the City. Adjacent to incorporated cities, the responsibility resides with the County of Shasta. As new areas are annexed, the City assumes responsibility for stormwater management.

Existing storm drainage facilities consist of conventional drop inlet/storm drainage pipeline collection and conveyance systems located throughout the City. These systems typically outfall into natural ravines or tributaries to the Sacramento River where the water is ultimately discharged.

Storm drainage facilities do not currently serve the proposed Project; however, storm drain infrastructure will be installed on-site in order to collect and convey the storm water from the Project to the Sacramento River. Storm drainage system outfalls would be constructed per City standards and located in close

²⁷ Letter from Redding Municipal Utility, dated July 31, 2008.

²⁸ Ibid.



proximity to public roads so as to be reasonably accessible for routine maintenance. These structures would contain a minimum fifty feet buffer zone from delineated waters of the U.S. Currently, the California Department of Transportation (Caltrans) maintains storm drain systems within the Eureka Way (SR-299) right-of-way, adjacent to the proposed Project.²⁹

SOLID WASTE / LANDFILL CAPACITY

Solid waste generated in the proposed Project area is disposed of at Shasta County's Richard W. Curry Landfill, located at 14095 Clear Creek Road in Redding. Under existing state permits, the landfill has sufficient capacity to accommodate the disposal of solid waste at least until the year 2017. Expansion of the facility also appears to be plausible at such time as increased capacity is warranted beyond the extent of existing permits. Although Shasta County owns the Richard W. Curry Landfill, it has contracted with the City of Redding for the operation and management of the facility. This arrangement was formalized in 1988. All residential, commercial, and industrial refuse in Redding is collected by City personnel.

Since 1995, the City has operated its own Solid Waste Transfer Station for the transfer of City-collected residential, commercial, and industrial refuse and the transfer of self-haul public refuse. The facility also has the capability of processing materials collected by curbside recycling programs and contains a household hazardous waste drop-off/processing area, and a composting area. The City of Redding's Transfer Station and Material Recovery Facility (MRF) is located on the east side of Redding at 2255 Abernathy Lane. The facility was constructed in 1994/5 and operations started in April 1995. The Transfer Station currently processes about 500 tons of garbage each day and was designed to operate at 750 tons per day to allow for growth.

The Solid Waste utility has invested in equipment, facilities, and staffing in order to meet the State's mandated recycling and solid waste requirements.³⁰ Recycling efforts within the City currently focus on the collection of residential, curbside recyclables and green waste, community education, and operation of a voluntary drop-off facility at the Solid Waste Transfer/Recycling Facility. Commercial recycling programs include the collection of corrugated cardboard, bar glass, office paper, newspaper, plastic containers, and the diversion of wood and metal wastes. Recyclable materials are processed at the Material Recovery Facility (MRF). The City contracts with the Shasta County Opportunity Center to provide sorting personnel at the MRF. Approximately 31 tons of recyclables are processed daily.

Although the Richard W. Curry Landfill has sufficient permitted capacity, the Utility would need to reorganize routes and possibly add additional equipment and staff to serve the proposed Project.

STREETS / ROADWAYS

Road maintenance would be provided by the City of Redding and by Caltrans on state highways, funded by gas, property and sales taxes. The City is responsible for ensuring the construction and maintenance of all public streets, sidewalks, bridges, bikeways, traffic signals and street signage within the incorporated City limits. The City also maintains a variety of Caltrans facilities consistent with the terms of various cooperative agreements. Developers are either totally or partially responsible for new street construction,

²⁹ Letter from Redding Municipal Utility, dated September 18, 2008.

³⁰ Letter from Redding Municipal Utility, dated July 31, 2008.



depending on the type and location of the proposed Project. The City uses public funds to build or improve major streets when past development did not make these improvements as part of their projects.

UTILITIES

Electric Service

As a California municipal corporation, the City of Redding owns, operates, and maintains a power transmission and distribution system within the City limits. Therefore, the City of Redding Electric Utility (REU) would provide electrical service to the proposed Project. Currently, REU has over 42,000 metered electric accounts, and the Redding Power Plant has more than 135 megawatts of installed generating capacity.

Existing facilities owned and operated by REU include transmission and distribution facilities within the proposed Project, and the Eureka Way Substation, located near the southeast corner of the proposed Project. This Substation would serve the Project and has sufficient capacity to serve the proposed Project load.³¹ The normal extension of distribution facilities throughout the proposed Project will be necessary to supply electricity to the Project. These new facilities will not impact service provided by REU. REU estimates the electric demand of the proposed Project will be two megawatts.³²

RMC Title 17, *Subdivision Ordinance*, §17.380 requires all subdivisions to underground electrical transmission lines. The City has indicated that it has adequate electrical supplies and nearby existing facilities to serve the proposed Project. The proposed Project would be required to locate all dry utilities in a common utility trench located within the Project street system to minimize environmental impacts and to provide for connection to existing dry utility services in surrounding streets.

Natural Gas

Natural Gas for the proposed Project would be provided by Pacific Gas and Electric (PG&E). The nearest gas distribution facilities are located at the intersection of Eureka Way (SR-299) and Buenaventura Boulevard.³³ It is estimated that the proposed Project would require approximately 18 megawatts per thousand cubic feet per hour (mcfh) of natural gas.

Telephone Services

The proposed Project is located within the AT&T local service area. Currently, the proposed Project has no telephone landline infrastructure or services; however, A T&T has indicated that telephone service could be extended from existing facilities at Lower Springs Road and Eureka Way (SR-299) in order to serve the proposed Project.³⁴

³¹ Ibid.
³² Letter from Redding Electric Utility, dated August 21, 2008.
³³ Letter from PG&E, dated September 8, 2008.
³⁴ Letter from AT&T, dated September 29, 2008.



Cable Services

Charter Communications provides cable television within urban areas of Redding, including the proposed Project area. Currently, there are no cable services located within the proposed Project boundaries; however, Charter Communications intends to tie-in at Buenaventura Boulevard, located to the east of the proposed Project, in order to provide service.³⁵

5.9.2 REGULATORY FRAMEWORK

STATE

Leroy F. Greene School Facilities Act of 1998 (SB 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 (Stats. 1998, Ch.407), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the \$9.2 billion education bond act approved by the voters in November 1998 as "Proposition 1A" reforms methods of school construction financing in granted by the State Allocation Board (SAB) from Proposition 1A.

Prior to the Leroy F. Greene School Facilities Act of 1998 (Government Code §65995-65998), case law allowed cities to consider and impose conditions to mitigate impacts of new development on school facilities. The 1998 School Facilities Act suspended this authority, commonly referred to as *Mira* authority.

Government Code §65995, as amended by SB 50, establishes the dollar amount school districts may impose on new development. The statute provides that, with limited exceptions, the amount of any fees, charges, dedications, or other requirements may not exceed the following:

- In the case of residential construction, two dollars and ninety-seven cents (\$2.97) per square foot of assessable space.
- In the case of any commercial or industrial construction, thirty-three cents (\$0.33) per square foot of chargeable covered and enclosed space. (Gov. Code §65995, subd. (b)).

These amounts were to be adjusted for inflation in the year 2000, and every two years thereafter (Id., subd. (b)(3)). Under specified circumstances, school districts may impose alternative fees pursuant to Government Code §§65995.5 and 65995.7 (Level 2 and/or Level 3 fees, respectively). If State funding expires at any time, school districts may impose up to 100 percent of the State average cost of school facilities on new development (alternative Level 3 fees). However, in 2006, if a State bond measure fails, *Mira* authority is partially restored to the extent that a city or county could deny an application but could not condition the project to pay fees above the fee set by the State.

Government Code §65995(e) states that a city or county does not have the ability to condition any land use approval, whether legislative or adjudicative, on the need for school facilities. In addition, Government Code §65995(f) prohibits a city or county from imposing a requirement to participate in a Community Facilities District ("CFD," also known as Mello-Roos district). Government Code §65995(g)(1) further states that a

³⁵ Letter from Charter Communications, dated August 4, 2008.



developer's refusal to participate in a CFD cannot be a factor in considering a "legislative or adjudicative" act. However, Government Code §65995(g)(2) further states that a "person can voluntarily elect" to pay a fee through a CFD.

New construction funds are allocated on a priority point basis. As a result, only schools with high priority points will be funded while districts without a high number of priority funds will not be funded. The State maintains a list of projects that have received an approval by the SAB but are designated as "unfounded approvals" since no funding has been made available. Essentially this is a list waiting for potential future funding and does not represent total unfounded need for projects on file. The list is updated monthly following the State Allocation Board Meeting. It is also important to note that an unfunded project approval does not guarantee a future apportionment by the SAB.

Proposition 47 (the Kindergarten-University Public Education Facilities Bond Act of 2002), a \$13.05 billion general obligation bond, was passed in November 2002. Because the measure passed, bond money will be available to provide funding for projects previously approved by voters in local school bond elections that couldn't be completed without matching funds. Every district that is overcrowded or has schools in need of repair is eligible for its fair share of Proposition 47 funds to build new classrooms and make safety repairs.

California Department of Water Resources (DWR)

The California Department of Water Resources (DWR) is responsible for the preparation of the California Water Plan and the management of State's surface water and groundwater resources. DWR also oversees the California Water Project and the regulation and protection of dams, other DWR functions include: assisting local agencies in preparation of their Urban Water Management Plans (UWMPs) and reviewing the plans to ensure compliance with the Urban Water Management Act.

State Water Resources Control Board (SWRCB)

The State Water Resources Control Board (SWRCB) was established in 1967 to administer state water rights and water quality functions. The SWRCB and its nine Regional Water Quality Control Boards administer water rights and enforce pollution control standards throughout the state. The SWRCB is responsible for granting water rights through appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water rights permits, the SWRCB must consider all beneficial uses, including water for downstream human and environmental needs. In addition to granting water rights, the SWRCB also issues water quality related certification to developers of water projects under Section 401 of the Federal Clean Water Act.

Central Valley Regional Water Quality Control Board (RWQCB)

City of Redding is located within the boundaries of the Central Valley Regional Water Quality Control Board (RWQCB), which issues the necessary permits required to produce and distribute recycled water and enforces Title 22 regulations set forth by the California Department of Health Services. Daily self-monitoring by the individual water companies is required to ensure water quality standards are being met. Data from daily monitoring is compiled into reports and filed with the RWQCB.



California Building Code

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the California Code of Regulations (CCR), Title 24, Part 2, known as the 2007 California Building Code (CBC). The California Department of Forestry and Fire Protection (CAL FIRE) and the Office of the State Fire Marshal (OSFM) revised the mandatory effective date for those areas where local government has responsibility for wildland fire protection (LRA) to July 1, 2008, to enable local government agencies more time to review and accept the fire hazard severity zone maps that will be presented to them formally after the new year.

Recently adopted building codes and standards reduce the risk of burning embers igniting buildings. Codes already in effect place standards on roofing construction and attic venting. The new building codes require siding, exterior doors, decking, windows, eaves wall vents, and enclosed overhanging decks to meet new test standards. The new ignition resistant codes apply to all fire hazard zones in the state responsibility area and in very high Fire Hazard Severity Zones in local responsibility areas. In addition, the new building rules require rural homeowners to clear brush and trees 100 feet around their homes, rather than 30 feet, the previous standard.

The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the wildland urban interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale. It is likely that the fire hazard severity zones will be used by local government as they update the safety element of general plans.

CITY OF REDDING

City of Redding General Plan

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects on public services and utilities. Applicable goals relative to the proposed Project site within these elements are listed in Table 5.9-11, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR PUBLIC SERVICES AND UTILITIES, below, followed by a brief explanation of how the proposed Project complies with the goals and policies.



TABLE 5.9-11
Consistency Analysis with City of Redding
General Plan Goals and Policies for Public Services and Utilities

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Public Facilities and Safety Element</u></p>	
<p><i>Goal PF1:</i> Ensure that adequate public services and facilities are available to support development in an efficient and orderly manner.</p>	<p>The proposed Project will construct all necessary on-site infrastructure needed to serve the development.</p>
<p><i>Policy PF1A:</i> Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with City standards.</p>	<p>The Project Applicant will be required to pay all associated development impact fees established by the City.</p>
<p><i>Policy PF1B:</i> Require that all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project.</p>	<p>The proposed Project consists of approximately 272.9 acres of undeveloped land, however, only 145.5 acres are suitable for development. Of the 440 units proposed, there will be 96 clustered single-family units and 96 apartment units.</p>
<p><i>Policy PF1H:</i> Encourage clustering of development to maximize the use and efficiency of infrastructure facilities.</p>	<p>The Redding Police Department has stated that they will provide police services to the proposed Project and will continue to adhere to their service thresholds.</p>
<p><i>Goal PF2:</i> Ensure a high level of police protection for the city's residents, businesses, and visitors.</p>	
<p><i>Policy PF2A:</i> Establish the following thresholds for police services:</p> <ul style="list-style-type: none"> • Maintain, at a minimum, a sworn officer to population ratio of 1,36 officers per 1,000 residents. • Respond to 85 percent of Priority 1 calls within 5 minutes of being dispatched. 	
<p><i>Goal PF4:</i> Ensure adequate fire protection and emergency medical response for residents and businesses in the community.</p>	
<p><i>Policy PF4A:</i> Establish the following thresholds for fire protection services:</p> <ul style="list-style-type: none"> • Maintain a community ISO rating of 3 or better. • Respond to 90 percent of all calls within 5 minutes of being dispatched. 	<p>The Fire Department receives funding from the City's General Fund. Property taxes generated from the proposed Project would result in increased property tax revenues to the General Fund that will assist in offsetting increased costs associated with additional Fire Department services. The City Council determines on an annual basis the funding for all City services based upon the budgets submitted by each department and the monies available.</p>



TABLE 5.9-11 (Continued)
Consistency Analysis with City of Redding
General Plan Goals and Policies for Public Services and Utilities

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Natural Resources Element</u></p>	
<p>Goal NR10: Preserve areas containing excessive slopes or 100-year floodplains as open space to prevent loss of life and property damage and to provide valuable habitat and recreational opportunities.</p>	
<p>Policy NR10C: Require, as a condition of development approval, that private open-space easements be established for significant areas of nondeveloped lands that exceed a slope of 20 percent. Use public dedications and/or trail easements when necessary to connect these areas to existing or proposed public open space.</p>	<p>The proposed Project includes lands that exceed a slope of 20 percent. The majority of these lands are set-aside as open space.</p>
<p><u>Health and Safety Element</u></p>	
<p>Goal HS4: Minimize the potential for loss of life, injury, and property damage resulting from urban and wildland fires.</p>	
<p>Policy HS4B: Require that all new development and redevelopment meet State and local standards for fire protection; encourage the upgrade of existing structures to current standards.</p>	<p>The proposed Project is located in an area that is in the very high fire hazard severity zone. All State and local building code standards will be met, in addition to the submittal of a vegetation fuel management plan, approved by the Redding Fire Department. This will serve to reduce the fire hazard potential.</p>
<p>Policy HS4E: Utilize appropriate techniques, such as those illustrated in Figure 4-8, to reduce fire damage in those areas with high wildland fire potential. The actual combination of these and/or other techniques required by the Fire Marshal based on the level of hazard involved.</p>	<p>The proposed Project will implement suggested fire-reducing techniques, such as those listed in Section 5.2, PUBLIC HEALTH AND SAFETY.</p>
<p>Policy HS4F: Construct emergency-vehicle access routes to open-space areas, including those that are located in existing subdivisions and in new development.</p>	<p>The subdivision design allows for adequate emergency vehicle access locations to open space areas.</p>
<p><u>Recreation Element</u></p>	
<p>Goal R2: Preserve and encourage the judicious development of those natural resource areas which have a unique recreation potential.</p>	
<p>Policy R2A: Establish park sites and public open-space areas along the river and tributary creeks through public and private land purchases, land dedications, easements, and similar mechanisms.</p>	<p>The proposed Project avoids development within the stream corridor set back requirements for Salt Creek. These areas, mostly with slopes greater than 20 percent, will be set aside as open space.</p>



TABLE 5.9-11 (Continued)
Consistency Analysis with City of Redding
General Plan Goals and Policies for Public Services and Utilities

General Plan Goals, Policies, and Objectives	Analysis
<p><i>Goal R4:</i> Provide a minimum of ten acres of improved parkland per 1,000 population and a broad range of facility types.</p>	<p>The proposed Project includes a 13.9 acre neighborhood park site. The parkland per population ratio is larger than 1,000 persons per ten acres as established in Goal R4.</p>
<p><i>Policy R4E:</i> Acquire Large Neighborhood and Community Park sites well in advance of their actual need.</p>	<p>The only proposed community park facility is a 13.9 acre neighborhood park. The land will be deeded to the City of Redding upon completion of construction. Stormwater detention facilities are not intended for the proposed Project.</p>
<p><i>Policy R4K:</i> Encourage collocation of public and private parks with flood-control facilities, such as stormwater detention basins, where appropriate, to maximize the efficient use of land.</p>	<p>The proposed Project includes a 13.9 acre neighborhood park. The land will be deeded to the City of Redding upon completion of construction. Stormwater detention facilities are not intended for the proposed Project.</p>
<p><i>Goal R5:</i> Ensure that new development contributes to the park, recreation, and improved open-space needs of the City.</p>	<p>The proposed Project includes a 13.9 acre neighborhood park.</p>
<p><i>Policy R5B:</i> Continue to require developers of residential property to contribute park sites or pay in-lieu fees at the maximum rate allowed by State law.</p>	<p>The subdivision design includes a development agreement between the Project Applicant and the City for developer construction of the proposed neighborhood park in conjunction with the subdivision in exchange for credits towards the Project's city-wide park development impact fee obligation.</p>
<p><i>Policy R5C:</i> Provide a partial credit toward in-lieu fees, parkland dedication requirements, and/or park development fees for:</p> <ul style="list-style-type: none"> • Construction of private recreation facilities, improved open-space areas, and parks. • Recreational amenities constructed within existing public park facilities or schools where a long term, joint-use agreement is in effect. • Private development of new public parks. 	<p>The proposed 13.9 acre neighborhood park would connect with the Sacramento River Trail.</p>
<p><i>Goal R11:</i> Promote and facilitate development of a citywide recreational trail system.</p>	<p>The proposed 13.9 acre neighborhood park would connect with the Sacramento River Trail.</p>
<p><i>Policy R11B:</i> Continue development of the Sacramento River Trail to establish a common and continuous thread along the river corridor, connecting recreational, educational, cultural, commercial, and residential areas/uses.</p>	<p>The proposed 13.9 acre neighborhood park would connect with the Sacramento River Trail.</p>

Source: *City of Redding General Plan*, October 2000.



City of Redding Municipal Code

RMC Title 9, Chapter 9.20 provides development standards for construction in a very high fire hazard severity zone as determined by the City of Redding Fire Department in conjunction with the California Department of Forestry and Fire Protection.

RMC Title 10 provides provisions for maintaining public peace, morals, and general welfare, including the identification of prohibited activities for parks, loitering, and other unlawful activities enforced by the City of Redding Police Department.

RMC Title 13 provides construction standards and long term maintenance provisions for new streets within the City.

RMC Title 14 provides construction standards and long term maintenance provisions for public utilities within the City.

RMC Title 17, Chapter 17.32, §17.32.110 states that “The design of the subdivision shall provide for adequate fire safety conditions. This may include: A) Multiple access points; B) Limitation on cul-de-sac length to a maximum of five hundred feet, except where alternative fire protection measures are provided as approved by the fire marshal; C) Provision of appropriate set backs; D) Provision of fuel management easements; E) Other appropriate measures as per the *General Plan* necessary to increase fire protection from wildland fires; F) For gated communities, the keypad shall incorporate an emergency code or other devices as approved by the fire marshal to allow access for emergency responses.”

Source Reduction and Recycling Element

The California Integrated Waste Management Board approved the County’s Source Reduction and Recycling Element in 1997, as part of the Integrated Waste Management Plan (IWMP). The IWMP is mandated by state law to identify and reserve sites for solid waste facilities and ensure that land uses adjacent to or near solid waste facilities are compatible with those facilities. The Source Reduction and Recycling Element addresses the County’s waste generation characteristics, source reduction, recycling, composting, education and public information, funding and integration of solid waste management issues.

5.9.3 STANDARDS OF SIGNIFICANCE

In accordance with the State *CEQA Guidelines*, the effects of a project are evaluated to determine whether they would result in a significant adverse impact on the environment. An Environmental Impact Report (EIR) is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria (standards) used to determine the significance of impacts may vary depending on the nature of a given project. Public Services and Utilities impacts resulting from the implementation of the proposed Project could be considered significant if they cause any of the results listed below.

PUBLIC SERVICES

A significant impact would occur if the proposed Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities; or



- Result in the 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, including fire protection, police protection, and other public facilities.

UTILITIES

A significant impact would occur if the proposed Project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects;
- 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;
- Have insufficient water supplies available to serve the project from existing entitlement and resources, and new or expanded entitlement is needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill that does not have sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Comply with federal, state, and local statutes and regulations related to solid waste; and/or
- Exceeds the capacity of the electrical and natural gas facilities within the project area.

5.9.4 IMPACTS

Public services and utilities impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

FIRE PROTECTION

5.9-1 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD RESULT IN THE NEED FOR ADDITIONAL FIRE FACILITIES OR PERSONNEL.

Impact Analysis: Due to the potential increase in urban development beyond existing conditions, additional demand for fire services may occur with implementation of the proposed Project. The creation of 440 residential units will increase the amount of calls for fire and EMS services. The closest RFD station is Fire Station Number 2, located at Placer Road and Buenaventura Boulevard, approximately 1.5 miles from the proposed Project. Fire Station Number 2 is currently staffed with two fire personnel, 24-hours per day,



seven days per week, and houses two fire engines.³⁶ The RFD would not need to build additional fire stations nor acquire additional apparatus and equipment to adequately serve the proposed Project.³⁷ However, current staffing levels at Fire Station Number 2 are not adequate to serve the proposed Project, but if all units in the proposed Project have fire sprinklers, the additional staffing needs would be mitigated to a lesser degree.³⁸ In addition, the Fire Department receives funding from the City's General Fund. Property taxes generated from the proposed Project would result in increased property tax revenues to the General Fund that will assist in offsetting increased costs associated with Fire Department services. The City Council determines on an annual basis the funding for all City services based upon the budgets submitted by each department and the monies available.

The RFD has fire protection requirements and standards for new development projects, including standards for defensible space (wildland fire terminology for the area around homes and property that has been prepared for fire suppression operations and for slowing an advancing fire's intensity), hydrant spacing, fire flow, access and roadway requirements, and limitations on building materials, as well as requiring adequate roadway widths. The City Fire Marshall reviews all projects wherein an entitlement is granted by the City (maps, use permits, etc.) prior to any construction for compliance with State and local requirements.

As part of the approval process, the proposed Project would be required to conform to the *Uniform Fire Code* and local amendments; Titles 19, 22, and 27 of the *California Safety Code Regulations*, and the *National Fire Prevention Association Standards*. These codes require projects to include specific design features such as ensuring appropriate emergency access, and requiring structures to be built with approved building materials, etc. Conformance with these codes helps reduce the risks associated with fire hazards. Accordingly, all construction plans would be approved by the Fire Department to ensure that all fire code requirements are incorporated into the proposed Project.

The proposed Project has the potential of having temporary, short-term construction-related impacts. If during construction there is a need to redirect traffic or block access routes or residential streets, potential delays in emergency response could result. As noted in Section 5.4, TRAFFIC AND CIRCULATION, the City requires a Traffic Management Plan (TMP) to ensure proper coordination during construction is achieved to reduce impacts to less than significant levels.

Provision of new or physically altered fire facilities, the construction of which could cause significant physical environmental impacts, are not associated with providing service to the proposed Project. Existing impact fees and other funding mechanisms would pay for any necessary upgrades, including service vehicles, equipment and increased staffing levels to accommodate the population. Additionally, compliance with fire safety standards and requirements such as interior sprinkler systems, fire alarms, emergency access, and adequate fire flow at public and on-site hydrants would be required during the plan check process, and would reduce fire protection impacts to less than significant levels.

Mitigation Measures: Refer to MM 5.2-3a through MM 5.2-3d in Section 5.2, PUBLIC HEALTH AND SAFETY.

Level of Significance: Less than significant impact with mitigation incorporated.

³⁶ Letter from the City of Redding Fire Department, dated September 5, 2008.

³⁷ Ibid.

³⁸ Ibid.



POLICE PROTECTION

5.9-2 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD INCREASE THE POPULATION WITHIN THE CITY OF REDDING AND REQUIRE ADDITIONAL LAW ENFORCEMENT SERVICES.

Impact Analysis: The proposed Project would increase the demand for law enforcement services in City of Redding. The RPD anticipates the proposed Project would impact their services because the proposed Project expands their area of service.³⁹ Additionally, the RPD foresees the potential for an increase in calls for service.⁴⁰

The RPD would need to hire an additional 1.4 officers to accommodate the proposed Project.⁴¹ This number was determined using the California Department of Finance, Demographic Research Unit's 2009 statistics, which indicate that each dwelling in the Redding area averages 2.43 occupants. Based on this statistic, the proposed Project would increase the City of Redding's population by 1,069 people (440 units x 2.43 occupants). Implementation of the proposed Project would require the RPD to hire 1.4 additional officers in order to preserve the quality and level of service provided by the RPD.

Similar to the fire protection services, the proposed Project has the potential of having short-term construction related impacts. If during construction there is a need to redirect traffic or block access routes or residential streets, potential delays in police response could result. Furthermore, construction areas may require additional police monitoring throughout the duration of Project construction both during day and nighttime periods. These temporary impacts would not be considered significant; nonetheless, mitigation measures pertaining to coordination during construction are provided to ensure potential impacts are reduced to a less than significant level. Refer to Section 5.4, TRAFFIC AND CIRCULATION, for short-term construction mitigation measures. In addition, the Police Department receives funding from the City's General Fund. Property taxes generated from the proposed Project would result in increased property tax revenues to the General Fund that will assist in offsetting increased costs associated with law enforcement. The City Council determines on an annual basis the funding for all City services based upon the budgets submitted by each department and the monies available.

The projected need for 1.4 additional officers does not trigger the need for new or expanded police facilities that could result in physical effects on the environment. Therefore, the proposed Project would have a less than significant impact on police services.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

³⁹ Letter from the City of Redding Police Department, dated September 2, 2008.

⁴⁰ Ibid.

⁴¹ Ibid.



SCHOOL FACILITIES

5.9-3 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD INCREASE STUDENT ENROLLMENT AT THE SHASTA UNION ELEMENTARY SCHOOL DISTRICT, THE SHASTA UNION HIGH SCHOOL DISTRICT, AND THE REDDING SCHOOL DISTRICT SCHOOLS.

Impact Analysis: The proposed Project would be served by the following Districts: the Shasta Union High School District for grades 9-12, the Shasta Union Elementary School District for grades K-8, and the Redding School District for grades K-8. Development of the proposed Project would generate additional students beyond existing conditions and would require the construction of additional school facilities to serve the increased population. The Redding *General Plan EIR* states that eight of the ten school districts in the City exceed capacity in 1999, including the RSD, the SUHSD, and the SUESD. However, the *General Plan EIR* clarifies that this is not considered an environmental impact due to State of California guidance. The *General Plan EIR* states:

"The State has preempted local jurisdictions from establishing mitigations for school impacts with the passage of Proposition 114/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998). Since SB 50 funds will be made available for school construction, the State has determined that such funds are adequate mitigation for school impacts."

The existing funding mechanisms under Senate Bill 50 (SB 50), bond measures within the school district, and state developer fees of \$1.78 per square foot of residential development and \$0.28 per square foot of commercial/industrial development, would offset funding impacts on the RSD, the SUHSD, and the SUESD caused by the proposed Project. State law restricts local jurisdictions from imposing additional impact fees (per the Leroy F. Greene School Facilities Act of 1998). New development within the school district may be requested to provide school sites to the district, with a developer impact fee reduction as an incentive. Pursuant to state law, payment of statutory fees represents full and complete school facilities mitigation. Per California Government Code §65995(h) and §65996(b), the existing fee mechanisms would fully mitigate the financial effects of the student population associated with the proposed Project and this is a less than significant impact. Additional school facilities that may be developed by the state and school districts as a result of increasing student populations are required to address physical impacts to the environment that may be caused by the development of the facility. Since the proposed Project is required to pay fees for school facilities by state law, this impact is considered less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

PARKS AND RECREATION

5.9-4 DEVELOPMENT OF THE PROJECT SITE WOULD CREATE ADDITIONAL DEMAND ON PARKS AND RECREATION FACILITIES.

Impact Analysis: Based on the City's *Subdivision Ordinance*, the Project's parkland obligation is 5.36 acres. With approximately 440 proposed units at 2.43 person per household, the proposed Project would generate approximately 1,069 persons, or a requirement of 10.07 acres based on the 10 acre per thousand people



standard. The proposed Project includes 13.9 acres of parkland and is therefore exceeding the *Subdivision Ordinance* and also furthering the larger goal of 10 acres of parkland per 1,000 population.

The proposed park will be a neighborhood park and will include those amenities listed in the City of Redding *Parks, Trails, and Open Space Master Plan* for this size of park. Such amenities proposed include a frisbee golf course, softball field, soccer field, basketball courts, ball wall, play grounds, a shade structure, and restrooms. Additionally, the proposed Project will be required to connect with an existing off-site trail connection to the Sacramento River Trail and provide a contribution to the trail program in-lieu of capacity enhancements. Impact fees normally assessed upon the Project will be credited and the developer will use these credited funds to pay for the park construction costs. This would result in less than significant park and recreational facility impacts.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

PUBLIC TRANSPORTATION

5.9-5 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD REQUIRE THE EXPANSION OF EXISTING BUS ROUTES AND THE CONSTRUCTION OF BUS STOP FACILITIES WITHIN THE PROPOSED PROJECT AREA.

Impact Analysis: The Redding Area Bus Authority (RABA) provides public transportation services in the proposed Project area. RABA Route 2 is currently serving the intersection of Buenaventura Boulevard and Eureka Way, southeast of proposed Project. The proposed Project would not interfere with existing transit service or transit stops and would potentially generate transit ridership. Expansion of Route 2 services would be considered as the Project is built out and the demand for services is warranted. Street design within the subdivision will accommodate bus turnouts at strategic locations as determined through final plan review.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

WATER SUPPLY AND DEMAND

5.9-6 DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT WOULD POTENTIALLY INCREASE WATER DEMAND.

Impact Analysis: The proposed Project includes 440 residential units and a 13.9 acre neighborhood park. A water demand estimate for the proposed Project is provided in Table 5.9-12, SALT CREEK HEIGHTS WATER DEMAND ESTIMATE, below.



TABLE 5.9-12
Salt Creek Heights Water Demand Estimate

Land Use	Acreage (ac)	Units (du)	Demand Factor ¹	Avg Day (gpd)	Annual Demand	
					(MG/yr)	(AF/yr)
Residential - Single Family	-	248	800 gpd/du	198,400	72	222
Residential - Cluster SFR	-	96	600 gpd/du	57,600	21	65
Residential - Apartment	-	96	400 gpd/du	38,400	14	43
Subtotal	258.1	440	-	294,400	107	330
Park	13.9	-	4 AFY/ac	49,618	18	55.6
TOTAL	272	440	-	344,018	126	385

Notes:

- Residential demand based on ~ 800 gpd for Single Family Residential per Table 3-2 of City of Redding 2000 *Water Master Plan*, and reduction in demand to account for cluster and apartment type uses.

Source: RBF Consulting, *Water Supply Assessment*, June 2009.

The proposed Project is located in the Hill 900 Pressure Zone of the of the RWU distribution system. In 1999, the Hill 900 Pressure Zone had 3,915 connections and an average daily demand of 4.6 million gallons per day. The 2000 City of Redding *Water Master Plan* estimated a peak (maximum day) demand of 1,800 gallons per day per connection. Therefore, the peak (maximum day) demand for the proposed Project of 440 units is 800,000 gpd. This value equates to a peaking factor of 2.3 from average day and maximum day when compared with Table 5.9-12, above. This value is consistent with the typical peaking range of 2.0 to 2.5.

Implementation of the proposed Project creates additional water demand needs for the City of Redding. The proposed Project was not identified in the RWU's 2005 UWMP; however, the UWMP projects annual increases in demand of approximately 500 AF. RWU has total water rights up to 46,140 AF annually in the form of surface and groundwater rights (39,355 AF during the most severe reduction of water supply associated with the Bureau reducing both the Sacramento River and Buckeye Contracts by 25 percent). As indicated in Table 5.9-12, above, the proposed Project would increase water demand by 385 AFY. This maximum would be reached over the course of several years as the Project builds out.

The proposed Project is planned as a multi-year development, where earliest completion of Phase I is envisioned sometime in 2011. Based on the *SB-610 Water Supply Assessment*, supplies exceed demand for normal, single-dry, and multiple dry-year conditions. In addition, the Project Applicant would be required to pay the RWU connection fee to account for percentage of cost to RWU for water supply and facility improvements, in order to plan for future demand. Water supply and demand increases associated with the proposed Project would be less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.



FIRE FLOW CAPACITY / STORAGE

5.9-7 THE PROPOSED PROJECT MAY RESULT IN THE NEED FOR INCREASED FIRE FLOW CAPACITY AND/OR STORAGE.

Impact Analysis: In February 2008, the City of Redding prepared a water utility analysis for the proposed Project. The distribution system was modeled by the City to determine the extent of fire protection and any necessary facility improvements. The analysis provided a needs assessment of fire flow requirements for the proposed Project compared to existing fire flow storage in the Hill 900 pressure zone. Since the proposed Project includes the development of 96 apartment units, the City determined that construction of a new 750,000 gallon storage facility in the Hill 900 pressure zone to increase fire flow supply would greatly reduce any decrease in water service pressure to adjacent development areas.⁴² As an alternative, a new on-site booster pump station would enable increased water supply in the event of a fire. Both options would require new pipelines to convey the increased flow, as listed in Section 3.0, PROJECT DESCRIPTION. MM 5.9-7 is provided to reduce potential impacts related fire flow capacity and/or storage to less than significant levels.

Mitigation Measures:

MM 5.9-7 Prior to issuance of building permits for any of the two-story apartments within the Project, one of the following two facilities shall be in place and operational to meet City and California Fire Code fire flow requirements to the satisfaction of the City Engineer:

1. An on-site pressure booster pump meeting the design specifications of the City. Funding for maintenance of the booster pump station shall be provided through creation of a utility maintenance district encompassing the Project.
2. A new 750,000 gallon storage reservoir in the Hill 900 pressure zone through City administration of the City's 2000 *Water Master Plan* and Capital Improvement Program.

Level of Significance: Less than significant impact with mitigation incorporated.

WATER PRESSURE

5.9-8 THE PROPOSED PROJECT MAY POTENTIALLY REDUCE WATER PRESSURE IN THE DISTRIBUTION SYSTEM.

Impact Analysis: On September 23, 2008, the City of Redding held a scoping meeting for the proposed Project where the issue of low water pressure in adjacent development areas was raised. As a result, on October 22, 2008, the City of Redding staff calculated theoretical water pressure and tested pressure in the field at three locations. Measurement sites were selected in development to the east of the proposed Project (less than a half-mile from the proposed Project). Field measurements were taken at 11:00 a.m. The results are provided in Table 5.9-13, WATER PRESSURE TESTING RESULTS.

⁴² Letter from Mr. David Braithwaite, City of Redding to Sharrah Dunlap Sawyer, February 8, 2008.



**TABLE 5.9-13
 Water Pressure Testing Results**

Address	Model Pressure In Pounds per Square Inch (PSI)	Field Pressure
827 Sunkist Court	Approximately 82 PSI	95 PSI at an outside faucet
916 Leisha Lane	Approximately 82 PSI	80 PSI at the meter
891 Sunriver Lane	Approximately 70 PSI	75 PSI at an outside faucet (PRV valve recently replaced)

Source: City of Redding, October 2008.

The results demonstrate adequate pressure at all three test sites, with pressure readings of 70 to 80 psi that exceed minimum pressure criteria of 40 psi. The pressure-zone has been analyzed to determine potential reductions due to construction of the entire Project and there were small reductions (~1-2 psi), but none dropped below the minimum acceptable level. The City water utility has made the determination that the reduction of 1-2 psi is less than significant.

Mitigation Measures: No mitigation measures are required

Level of Significance: Less than significant impact.

SEWER SERVICES

5.9-9 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD RESULT IN THE INCREASED DEMAND AND EXPANSION OF SEWER SERVICES.

Impact Analysis: Wastewater from the proposed Project would be treated by the City of Redding at the existing Clear Creek WWTP. There are no sewer lines currently serving the proposed Project; therefore, implementation of the proposed Project would require the construction of a sewer system to service the proposed Project area. The Project proposes a new sewer main that connects to an existing stub on Eureka Way (SR-299), then runs northwest along Buenaventura Boulevard to the proposed Project's eastern boundary. Four sewer lift stations are proposed on-site to convey wastewater from the site to the existing City collection system located in Buenaventura Road.

The existing off-site sewer system that would ultimately serve the proposed Project is currently nearing capacity. Implementation of the proposed Project would present a significant increase in sewer service demand necessitating upgrades to both downstream sewer mains and the Mary Street Pump Station to adequately serve the proposed Project.⁴³ The Mary Street Pump Station and accompanying a new force main is a City project programmed in the City's CIP. In addition, the City collects a development impact fee for improvements to its wastewater collection system upon issuance of a building permit. This fee is utilized to help finance those improvements identified in the *Wastewater Utility Master Plan* as necessary to accommodate growth of the City. The timing of construction will be based on the rate of development of the

⁴³ Ibid.



Project. Impacts are potentially significant; however, implementation of MM 5.9-9a and MM 5.9-9b would reduce impacts related to sewer services to less than significant levels.

Mitigation Measures:

MM 5.9-9a During the course of phased Project development, off-site improvements to the City wastewater collection system shall be made in accordance with the City's 2003 *Wastewater Utility Master Plan* and Capital Improvement Program, generally as follows:

1. Phase 1 - Upsize "Jenny Creek" line downstream of manholes K3-11 and K3-15.
2. Phase 2 - Upsize "Trinity Street" line downstream of manholes J6-41, J6-28, and J6-32.
3. Phase 3 - Construct Phase II, Parts 1 and 2, of the Westside Interceptor.

MM 5.9-9b Wastewater collection improvements shall be constructed in accordance with City standards and the specifications of the City Engineer. Funding for maintenance of the private sewer pump stations shall be provided through creation of a utility maintenance district encompassing the Project.

Level of Significance: Less than significant impact with mitigation incorporated.

SOLID WASTE / LANDFILLS

5.9-10 IMPLEMENTATION OF THE PROPOSED PROJECT MAY RESULT IN INCREASED DEMAND FOR SOLID WASTE SERVICES.

Impact Analysis: Implementation of the proposed Project has the potential to increase demand for solid waste services. The proposed Project would generate construction debris on a short-term, temporary basis during construction. Recycling of construction debris would reduce the potential amount of waste disposed of at landfills in the County, and would contribute to the recycling goals set forth by the City of Redding and AB 939. In particular, the City's Solid Waste Utility has invested in equipment, facilities, and staffing in order to meet the State's mandated recycling and solid waste requirements.⁴⁴

Waste from the Project site would be disposed of at the Richard W. Curry Landfill. According to the California Department of Finance, Demographic Research Unit's 2009 Statistics, each dwelling unit in the Redding area averages 2.43 occupants. The proposed Project would include 440 units (248 single-family units, 96 clustered single-family units, and 96 apartment units), resulting in an increased population of 1,069 people. The *General Plan EIR* indicated that the solid waste generation rate for residential properties in the City of Redding is 1.8 pounds per person per day in 1996. Assuming that this generation rate is still accurate for 2009, the proposed Project would generate approximately 1924.2 pounds of waste per day (1,069 persons x 1.8 pounds per day), which equates to approximately 350.4 tons of solid waste annually (0.96 tons per day x 365 days).

⁴⁴ Letter from the Redding Municipal Utility, dated July 31, 2008.



Implementation of the proposed Project would not have an adverse affect on the City's ability to maintain acceptable levels of service or generate waste in excess of the Richard W. Curry Landfill's permitted capacity. The Redding *General Plan* indicates that under existing state permits, the landfill has sufficient capacity, based on *General Plan* population and housing unit projections, to accommodate disposal of solid waste to at least 2017. However, with the addition of 440 homes, the City's Solid Waste Utility may need to reorganize routes and possibly add additional equipment and staff.⁴⁵ The City Solid Waste Utility receives funding from the City's General Fund. Property taxes generated from the proposed Project would result in increased property tax revenues to the General Fund that will assist in offsetting increased costs associated with solid waste collection. The City Council determines on an annual basis the funding for all City services based upon the budgets submitted by each department and the monies available.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

ELECTRICAL SERVICES

5.9-11 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD INCREASE DEMAND FOR ELECTRIC SERVICE AND REQUIRE THE EXTENSION OF EXISTING INFRASTRUCTURE.

Impact Analysis: The Redding Electric Utility (REU) would provide the proposed Project with electric services. REU has transmission and distribution facilities within the proposed Project area, in addition to a substation directly adjacent to the proposed Project. The aforementioned substation is known as the Eureka Way Substation and would have sufficient capacity to serve the proposed Project.⁴⁶ REU estimates the electricity load of the proposed Project would be 2.0 megawatts. In order to supply the proposed Project with electricity, the existing facilities would need to be extended.⁴⁷ The proposed Project would not adversely affect the existing electric service provided by REU; therefore, a less than significant impact would occur.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

NATURAL GAS

5.9-12 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD INCREASE DEMAND FOR NATURAL GAS AND REQUIRE THE EXTENSION OF EXISTING INFRASTRUCTURE.

Impact Analysis: PG&E would provide natural gas to proposed Project; however, in order to provide natural gas to the proposed Project, facilities constructed within the proposed Project would tie into existing PG&E pipes at Buenaventura Boulevard and Eureka Way (SR-299).⁴⁸ PG&E estimates the proposed 440 residential units would require 18 megawatts per thousand cubic feet per hour of natural gas. PG&E indicated that they

⁴⁵ Ibid.

⁴⁶ Letter from Redding Electric Utility, dated August 21, 2008.

⁴⁷ Ibid.

⁴⁸ Letter from PG&E dated September 8, 2008.



have adequate natural gas supplies to accommodate the proposed Project.⁴⁹ Impacts regarding natural gas are considered less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

TELEPHONE SERVICES

5.9-13 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD REQUIRE THE EXTENSION OF EXISTING TELEPHONE SERVICE INFRASTRUCTURE.

Impact Analysis: AT&T will provide telephone service to the proposed Project. There are existing AT&T facilities near the proposed Project at Lower Springs Road and Eureka Way (SR-299).⁵⁰ AT&T does not anticipate the proposed Project would adversely affect their ability to provide telephone service to the proposed Project and the surrounding areas. AT&T would most likely need a easement of approximately 20 feet by 20 feet to place equipment; however, this location and size would be determined once the proposed Project is designed.⁵¹ AT&T has indicated that they have adequate supplies and facilities to accommodate the proposed Project.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

ROADWAY MAINTENANCE

5.9-14 IMPLEMENTATION OF THE PROPOSED PROJECT MAY REQUIRE THE NEED FOR PUBLIC ROAD MAINTENANCE, AND THE NEED FOR NEW ROADS.

Impact Analysis: The proposed Project would increase the total maintained miles for the City of Redding Streets Maintenance Division. The current level of service provided by the Streets Maintenance Division is 33 miles per employee (14 employees maintain 462 miles of roadway).⁵² Without an increase in staff, the level of service for street maintenance provided to the City of Redding would be reduced as a result of the increased roadway lengths within the proposed Project.⁵³ The type of maintenance required within the proposed Project and on surrounding streets would include crack sealing, slurry sealing, selective removal and replacement of failed sections of asphalt, up to and including total re-construction and possible widening to hand any increase in traffic volume.⁵⁴ In addition, the City's Streets Maintenance Division receives funding from the City's General Fund. Property taxes generated from the proposed Project would result in increased property tax revenues to the General Fund that will assist in offsetting increased costs associated with street maintenance. The City Council determines on an annual basis the funding for all City services based upon the budgets submitted by each department and the monies available.

⁴⁹ Ibid.

⁵⁰ Letter from AT&T dated September 29, 2008.

⁵¹ Ibid

⁵² Letter from City of Redding Streets Maintenance Division, dated August 5, 2008.

⁵³ Ibid.

⁵⁴ Letter from City of Redding Streets Maintenance Division, dated August 5, 2008.



Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

CUMULATIVE IMPACTS

5.9-15 POTENTIAL CUMULATIVE DEVELOPMENT WOULD INCREASE THE DEMAND FOR SERVICES AND UTILITIES. AN INCREASED DEMAND FOR SERVICES MAY BE EXPECTED FOR THE REDDING POLICE DEPARTMENT, FIRE DEPARTMENT, LOCAL SCHOOL DISTRICTS, AND OTHER PUBLIC SERVICES. INCREASED DEMAND FOR UTILITIES MAY BE EXPECTED FOR ELECTRICITY, NATURAL GAS, WATER, WASTEWATER, AND SOLID WASTE.

Impact Analysis: Although there would be a substantial service and utility demand increase attributable to the extent of the potential cumulative development, the overall potential for service-related cumulative effects to occur is not considered significant. This conclusion is based primarily on the rationale that: (1) already constructed residential and non-residential development would only have occurred after having satisfied all development specific requisite permit, code, policy, and other City of Redding development requirements and contributed their fair share of impact fees in order to ensure their participation in addressing area-wide (cumulative) growth and service-related demand issues; and (2) by having done the latter, each specific development would in effect be self-mitigating with regard to placing a potentially significant demand upon an area's public services and facilities. All impacts associated with public services and utilities for the proposed Project would be considered less than significant with adherence to and compliance with all applicable goals, policies and implementation measures set forth by the City of Redding, including the mitigation measures listed within this section.

Mitigation Measures: Refer to mitigation measures listed above.

Level of Significance: Less than significant impact with mitigation incorporated.



5.10 GEOLOGIC RESOURCES

The purpose of this section is to describe the geologic and seismic setting of the Project area, identify potential impacts associated with implementation of the proposed Project, and, as necessary, recommend mitigation to reduce the significance of impacts. The issues addressed in this section are risks associated with faults, strong seismic ground shaking, seismic-related ground failure such as liquefaction, landslides, and unstable geologic units and/or soils. Information in this section is based on the *Preliminary Soils Report*, prepared by SHN Consulting Engineers and Geologists, Inc., dated December 2008. The report is included in Appendix 15.8, PRELIMINARY SOILS REPORT.

5.10.1 EXISTING CONDITIONS

The City of Redding is located at the northern end of the Sacramento Valley, the northernmost part of the Great Valley geologic province. The region comprises a thick sequence of relatively undeformed Mesozoic and Cenozoic sedimentary rocks. The Great Valley geologic province is a major structural and topographic depression surrounded by areas of rugged, elevated topography. The City is bounded to the west by the Coast Ranges, to the north by Mount Shasta, and to the east by Lassen Peak. Mount Shasta and Lassen Peak are part of the Cascade volcanic chain. Active volcanoes are symptomatic of the active tectonism and volcanism of this portion of northern California. These geologic conditions are due in large part to the presence of the southern Cascadia subduction zone, where the Gorda oceanic plate is pushed eastward beneath the North American continental plate and the San Andreas Fault system is pushed further southwest. The subduction zone underlies Redding at a depth of approximately 34 miles (55 kilometers [km]).

Most of the City is situated on a series of alluvial sand and gravel terraces formed within the flood plain (and former flood plains) of the Sacramento River. Beneath these terrace deposits are rocks of sedimentary origin such as marine and volcanic sandstone and siltstone, as well as igneous and metamorphic rock.

GEOLOGY

Geologic Structure

Two geologic formations are exposed within the proposed Project. Well-indurated bedrock exposed at the proposed Project consists of meta-volcanic rock belonging to the Copley Greenstone Formation. The Copley Greenstone is overlain by a relatively thin veneer of the Red Bluff Formation that was deposited over much of the northern portion of the Great Valley geologic province during the Pleistocene geologic time. The Copley Greenstone is estimated to be middle Devonian in geologic age, and consists of keratophyric and spilitic pillow lavas and pyroclastic rocks. The Copley Greenstone is the oldest formation exposed within the city of Redding, and is generally highly weathered and highly fractured within the near surface exposures. The Copley Greenstone is locally suitable for decorative stone, although the durability of the stone is poor within the highly weathered rock near the ground surface.

The Red Bluff Formation is a flat lying, well consolidated lithological unit of Pleistocene geologic age, and generally consists of boulders, cobbles, and gravel within a matrix of sand and clay. The gravel, cobble, and clay content varies locally, but the stiff consistency of the clay matrix is prominent throughout the materials encountered. The formation is distinguished from alluvial soils within the great valley by its degree of cementation and iron staining. In some exposures along the Sacramento River downstream of the proposed



Project, the bluffs are near vertical for as high as 100 feet, indicative of the characteristic cementation. The cobbles and gravel are predominantly subrounded in particle shape.

Erosion processes have created relatively steeply incised drainages cut into the Copley Greenstone. The proposed Project is bounded by these drainages, namely Salt Creek on the west and Gold Run Creek on the east. The Red Bluff Formation is only exposed within the higher elevations of the proposed Project where it has not been eroded.

Topography

The site topography consists of a relatively flat to gently sloped terrace, surrounded by moderately steep to steep slopes which flow into drainages and stream channels. The majority of grading for the proposed Project would occur within the gently sloped terrace areas in the higher elevations of the Project. Some custom homebuilding lots are proposed within the moderately sloped areas surrounding the main terraces. Numerous ephemeral drainages flow into the intermittent Salt Creek and Gold Run Creek channels; these channels bound the proposed Project area on the west and east, respectively.

Soils

A study of the soil survey for Shasta County, published by the Natural Resources Conservation Service, was conducted for the proposed Project. The boundaries of the soil survey map units within the proposed Project can be reviewed in Appendix 15.8, PRELIMINARY SOILS REPORT. Five soil types were mapped within the proposed Project. A list of soil survey Map Unit Names within the proposed Project is provided in Table 5.10-1, SOIL SURVEY MAP UNITS, along with generalized soil descriptions for each unit. Additional maps of the soil types, properties, and detailed descriptions are included in Appendix 15.8.

TABLE 5.10-1
Soil Survey Map Units

Map Unit No.	Soil Type Name	Description and Maximum Depth in Inches
AtE2	Auburn very stony clay loam	Residuum weathered from metavolcanics, 30 inches to lithic bedrock
AuF2	Auburn very rocky clay loam	Rock outcrops and residuum weathered from metavolcanics, 0 to 20 inches to lithic bedrock
GdD	Goulding very stony loam	Residuum weathered from metavolcanics, 16 to 20 inches to lithic bedrock
GeE2	Goulding very rocky loam	Rock outcrops and residuum weathered from metavolcanics, 0 to 20 inches to lithic bedrock
RcB	Red Bluff gravelly loam	Gravelly clay loam to 30 to 40 inches, becoming indurated (cemented) at greater depth

Source: SHN Consulting Engineers and Geologists, *Preliminary Soils Report*, December 2008.

The two Auburn series and the two Goulding series soil types may all be combined into one soil type for simplification. These soil units will be referred to as Copley Greenstone. The main variability within these metavolcanic soil units is the degree and depth of weathering. The metavolcanic rock exposed at the ground surface is generally soft to moderately hard rock, and is highly fractured. The thin soil mantle over the top of the rock is a result of weathering in place of the parent rock material (residuum).



The Red Bluff gravelly loam would be classified as clayey gravel with sand, based on visual-manual soil classification techniques in accordance with American Society for Testing and Materials procedure D2488. The maximum thickness of the Red Bluff gravels is estimated to be approximately 50 to 60 feet within the proposed Project area. Based on the surface exposures, the Red Bluff gravel material may contain up to about 25 percent oversize (greater than 4 inches) material (cobbles and boulders). A maximum particle size of approximately 24 inches was measured during the Project site evaluation.

The contact between the Red Bluff Formation and the underlying Copley Greenstone was observed in sufficient locations to map the extent of the two distinct soil and rock materials across the proposed Project. Approximately 40 way points were marked in the field with a handheld Global Positioning System unit where the contact was observable. The contact was easily observable in drainage channels and roads around the site. The change in material type was also observed within disturbed surface features.

As can be observed in Figure 5.10-1, SOIL AND GEOLOGY MAP, the majority of grading for residential building lots is proposed within the clayey sand, gravel, and cobbles of the Red Bluff Formation. All of the proposed custom home building sites, however, are located in the harder rock of the Copley Greenstone.

The residual weathered metavolcanics are listed in the Soil Conservation Service (SCS) soil survey as having moderate to high hazard of erosion. Numerous eroded channels that have exposed the underlying indurated greenstone have been observed. These channels are generally outside of the proposed graded area. Storm drainage into these channels has a low risk of further erosion due to the soil already having entirely eroded, in as much as the flow quantity is similar to pre-existing conditions.

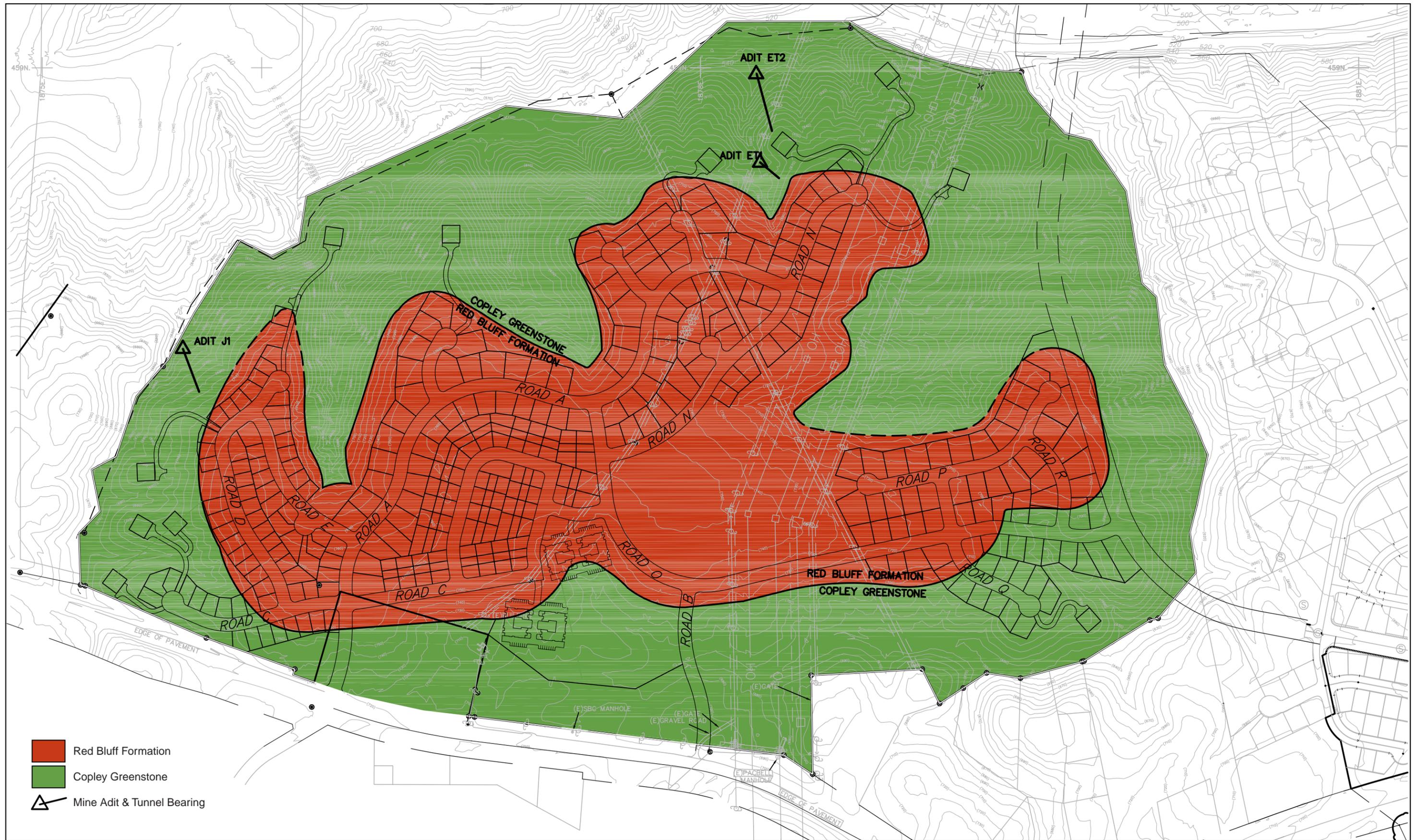
The hazard of erosion within the clayey gravel and cobbles of the Red Bluff Formation is described as slight to moderate for areas greater than 3 percent slopes, and none to slight for areas less than 3 percent slope. Concentrated runoff within this material is discouraged. Sheet flow is anticipated to have a low hazard of erosion.

Groundwater

The observed soil materials of the Red Bluff formation are hard and relatively impervious to water infiltration. The rock materials of the Copley Greenstone are also relatively impervious to water infiltration; however, secondary permeability within rock fractures and joints will allow water to slowly infiltrate. Water seeps were not observed at any point across the Project area except within the mine adits at the base of the slopes along Salt Creek, where the water within the mine adits was stagnant.

FAULTING AND SEISMICITY

The proposed Project is located in an area with moderate historical seismic activity. Seismic activity in the vicinity of the proposed Project can come from various sources: continental faulting, subduction of continental plates, and volcanic activity.



Source: SHN Consulting Engineers & Geologists, Inc., March 2009.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Soil and Geology Map



Earthquakes

An earthquake is the release of stored energy in the earth due to sudden movement along a geologic fault. This energy release can result in ground shaking of the Earth's surfaces. Earthquakes can also be associated with volcanic activity. According to the Fault Map of California, Quaternary faults, or faults that have shown evidence of movement in the last two to three million years, are located in the eastern and southern portions of Shasta County. In the western portion of the County, the faults are older and considered to be inactive. The Alquist-Priolo Earthquake Fault Zoning Act defines active faults as having caused surface rupture within the last 11,000 years. However, some active faults have no surface expression and not all fault traces have been mapped. Active and inactive fault lines in Shasta County are shown in Figure 5.10-2, SHASTA COUNTY FAULT MAP.

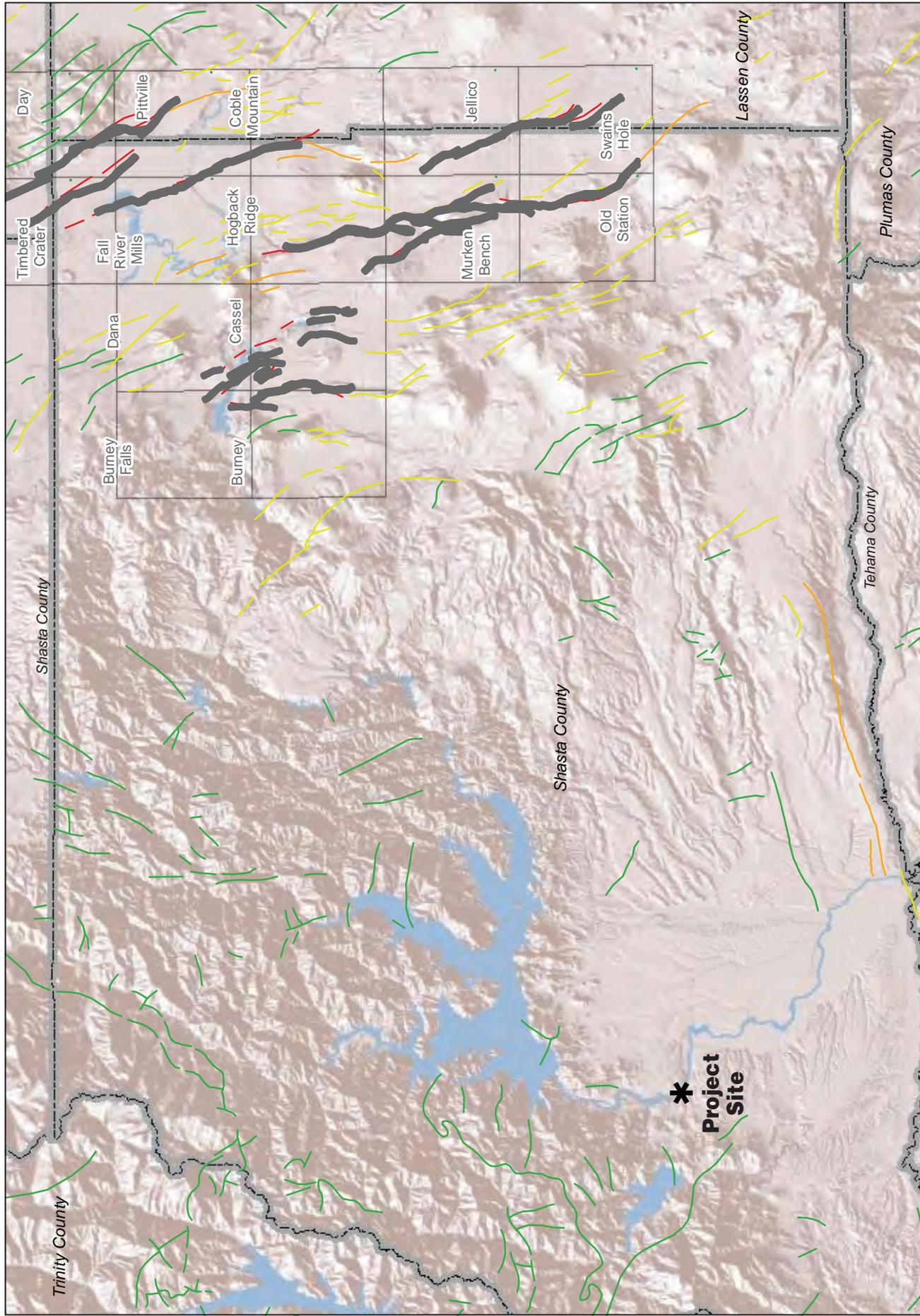
Historical earthquakes within the local Redding area have not been assigned to known faults. The closest active fault to the site is approximately 53 miles east of the proposed Project. The State of California designates faults as active based on the recency of movement that can be substantiated for a fault. Active faults are designated based on evidence of rupture within the Holocene (within the last 11,000 years) period.

No faults are known to pass through the proposed Project. Lineaments or other features indicative of potential faults were not observed from aerial photographs. A number of regional and local faults traverse the Project region. The most significant of these faults is the potentially active Battle Creek fault, located about 17 miles south of the proposed Project. The Battle Creek Fault Zone consists of several northeast-trending normal faults that dip toward the south, and show evidence of rupture in Pleistocene geologic time.

In addition to the continental faulting noted above, the proposed Project rests above the Cascadia subduction zone. West of the proposed Project, off the coast of California, the oceanic crust of the Gorda plate is being subducted beneath the continental crust of the Pacific, in an area known as the Gorda Escarpment. The descending ramp caused by that subduction, called the Cascadia Subduction Zone, extends beneath the proposed Project at a depth of about 20 to 25 miles. That ramp is capable of storing elastic stress that periodically causes earthquakes that could affect the Project area.

Ground Failure

The various processes grouped within ground failure include on- or off-site landslide, lateral spreading, subsidence, and liquefaction. Lateral spreading and slumping are often caused by liquefaction. In Shasta County, the hazard from lateral spreading and slump-type failures is expected only around the edge of alluvial terraces and along the flood plain of the Sacramento River. Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Subsidence is not considered to pose a significant hazard within the Redding area. Liquefaction is the temporary transformation of water-saturated granular soils to a liquid state, much like quicksand, usually as result of ground shaking. The proposed Project, located between the Sacramento River and the foothills, is considered an area with low liquefaction potential according to the Redding *General Plan*.



Source: California Geologic Survey, 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

- Approximate locations of Fault-Rupture Hazard Zones
- Late Quaternary
- Quaternary
- USGS Quadrangle
- Prequaternary
- Holocene
- Historic



not to scale



10/1/08_JN 60-100416-15334_MAS

Shasta County Fault Map

Figure 5.10-2



Seismically Induced Landslides

Landslides occur throughout Shasta County, although they have not been considered a major problem. Landslides are more prevalent in the eastern and northern portions of Shasta County and are commonly related to the sedimentary and volcanic rocks in these vicinities. Landslides in West Redding are possible in areas with poorly consolidated sedimentary rocks overlain by massive volcanic rocks, and have the potential to occur in the proposed Project area.

Non-Seismic Geologic Hazards

Non-seismic geologic hazards include volcanic eruptions, seiches, erosive soils, and expansive soils. Volcanic eruptions and seiches are not considered a significant threat in the Redding area. While Shasta County is at the southern end of the Cascade Range, an active volcanic chain that extends from Lassen Peak northward into British Columbia. Redding is considered distant enough from the three area volcanoes, including Lassen Peak, Mount Shasta, and Medicine Lake Volcano that it is unlikely that the area would be significantly affected by a volcanic eruption. In the case of an eruption of Mount Shasta, volcanic ash may fall in the northern part of Redding and minor seiches in Lake Shasta could be generated by debris flows into the arms of the lake where its tributaries enter. Given the large holding capacity of Shasta Lake and Whiskeytown Lake, strong ground shaking could potentially generate seiches in both water bodies. In the case of Shasta Lake, the seiche would have to be over 20 meters in height in order to overtop Shasta Dam at full capacity.

Expansive soils swell when wet and shrink as they dry. Expansive soils generally contain mixed layer clays, known as smectite, that expand when moisture is absorbed into the crystal structure. This results in a rise in the ground surface. Most of Shasta County is characterized by moderately expansive soils. Though expansive soils are not considered to pose a significant hazard within the Redding area. The effects of expansive soils on structures can be mitigated through proper engineering design and standard corrective measures.

Erosion is a normal and inevitable geologic process generally involving the removal of earth materials from one area with deposition to another area. Examples of concentrated erosion include gullied land surfaces and undercut stream banks. Expansive erosion includes sheetwash and slope denudation. Excessive erosion causes sedimentation and can damage or destroy waterway and riparian habitat, clog drainage structures, lakes, reservoirs, and floodplains. Human activities, such as grading, frequently accelerate erosion and sedimentation. Erosion concerns are particularly heightened whenever development activities are proposed in soils containing parent materials of decomposed granite, as decomposed granite soils are very difficult to re-stabilize and offer very poor nutritional support for the re-establishment of vegetative cover.

FORMER MINING ACTIVITY

Potential mineral resources of the Red Bluff formation include sand, gravel, gold, and brick clay. Evidence of placer mining for gold within the clayey gravels and cobbles was observed in areas of the proposed Project. The most significant area of placer mining within the area to be graded was observed at the western portion of the proposed Project area northeast of building lots 1 through 8, refer to Figure 5.10-1, SOIL AND GEOLOGY MAP. The tailings left behind from these mining operations consist of cobbles that are piled at the angle of repose.



Drainage ditches for water diversion were observed in various locations around the site. These ditches are generally less than 4 feet in depth, and less than 10 feet in width.

Potential mineral resources of the Copley Greenstone include gold, talc, tungsten, minor massive sulfide ore, and dimension stone. Evidence of mining activity that was observed within the Copley Greenstone included lode gold mine adits and numerous mined pits of small size. The adits appear to expose drift mining methods, which are relatively horizontal mine tunnels, or they are sometimes advanced at a slight incline so that removal of material can be assisted by gravity.

Named lode gold mines in the vicinity of the proposed Project include the Jefferson Mine, and the Eureka Tellurium mine (also named Telluride Consolidated during some time of its operation). The Mountain Top Mine is also located adjacent to the proposed Project on the southwest side. One adit was located for the Jefferson Mine, referenced as Adit J1 on Figure 5.10-1, SOIL AND GEOLOGY MAP. The mine tunnel is straight and horizontal, with a strike of 160 degrees (azimuth clockwise from north). The indurated rock above the ceiling of the adit at the entrance is approximately three feet in thickness, and increases to an overburden of at least 20 feet this at a distance of 80 feet from the adit. Standing water was visible within the mine tunnel at the time of the field investigation conducted for this EIR.

The Eureka Tellurium mine was first mined in the 1850's, and was a small operation in 1901. Several adits are reported to have been mined, one of which is 520 feet long. The Eureka Tellurium mine is mapped on the geology map of the Redding Quadrangle. Mine adits were not encountered at this location, but it is believed that two adits located in the northwest area of the proposed Project along Salt Creek pertain to this mine, designated Adits ET1 and ET2 on Figure 5.10-1. It is possible that ET1 is an air vent that connects to ET2. The entrance to ET1 appears to be sloped at an angle of 30 degrees downward, but it may have been filled with waste rock to create the inclined ground at the close of operations. The rock ceiling of Adit ET1 has a predominant joint or bedding that dips approximately parallel to the direction of the opening. The inside of this load mine adit is not visible or accessible since the height of the opening is approximately one foot; however, it appears to strike at an angle of 130 degrees (azimuth clockwise from north).

Adit ET2 appears to be straight and horizontal, with a strike of 165 degrees (azimuth clockwise from north). The indurated rock above the ceiling of Adit ET2 at the entrance is approximately six feet in thickness, and increases to an overburden of at least 20 feet within a horizontal distance of 50 feet from the adit. Standing water was visible within the mine tunnel.

The coordinates of the mine adits that were found in the field are listed in Table 5.10-2, GOLD MINE ADIT LOCATIONS. These coordinates are based on a handheld global positioning system unit, and should have an accuracy within about 20 feet.



TABLE 5.10-2
Gold Mine Adit Locations

Adit No.	Latitude (degrees)	West Longitude (degrees)
J1	40°35' 19.7"	122°26' 56.0"
ET1	40°35' 28.2"	122°26' 22.0"
ET2	40°35' 32.1"	122°26' 22.2"

Source: SHN Consulting Engineers and Geologists, *Preliminary Soils Report*, December 2008.

It is not necessary to enter the mine adits J1 and ET2 to explore deep within them. Their location in relation to the proposed grading as detailed in the Figure 3-4, TENTATIVE SUBDIVISION MAP, is sufficiently separated by hard rock overburden to limit adverse effects to the proposed grading. In addition, the lode gold mines are drift mined, and would therefore continue horizontally into the hill. The risk of subsidence at the ground surface if the tunnels were to collapse is very low due to the mines being in hard rock with more than adequate overburden materials to bridge around failed tunnel sections. Based on the lack of abundant waste rock around the mine adits, it appears that the mine workings are not extensive. The actual strike and dip of the mine tunnel at Adit J1 is unclear, and exploration deeper into the tunnel was not possible due to the small opening.

5.10.3 REGULATORY FRAMEWORK

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 (originally enacted as the Alquist-Priolo Special Studies Zones Act and renamed in 1994) and is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo 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. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. There are no Earthquake Fault Zones subject to the Alquist-Priolo Earthquake Fault Zoning Act within the proposed Project.

California Building Standards Code

The State of California provides minimum standards for building design through the California Building Code (CBC). The CBC is based on the Uniform Building Code (UBC), which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis), and has been modified for conditions within California.



CITY OF REDDING

City of Redding Municipal Code

The purpose of the Clearing, Grading, Fills, and Excavation Code (Title 16 in the RMC) is to safeguard life, health, property, the environment, and the public welfare by establishing minimum requirements for grading, clearing, and erosion control (Ordinance 2246 § 2 (part), 1999). The code sets forth rules and regulations that control clearing and grading, the prevention of erosion and other environmental damage; establishes administrative procedures for issuance and enforcement of permits; and provides for the approval of plans and inspection of grading and erosion-control operations. Cuts, fills, drainage, and erosion control are required to be designed and constructed per the Standard Specifications for Public Works Construction (Green Book), latest edition, and the City of Redding Construction Standards and, if the grading is proposed to support structures, the California Building Code (Ordinance 2246 §2 (part), 1999). The Clearing, Grading, Fills, and Excavation Ordinance applies to any development project resulting in the excavation of fifty cubic yards of earth material. The ordinance also ensures compliance with the City's National Pollutant Discharge Elimination System (NPDES) Permit, which is issued by the Regional Water Quality Control Board (RWQCB).

As part of the Grading Ordinance, the City of Redding Public Works Department requires an Interim and a Final Erosion and Sediment Control Plan for all new development projects (RMC Title 16, §16.12.060). These plans are required to outline the implementation procedures for controlling erosion, sedimentation, and other pollutant runoff and require a plan for soil storage before, during, and after construction.

City of Redding General Plan

The *General Plan* sets forth goals and policies to ensure public safety during seismic events and potential geologic effects, including liquefaction and subsidence. The applicable goals and policies are discussed below in Table 5.10-3, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR GEOLOGIC RESOURCES.



TABLE 5.10-3
Consistency Analysis with City of Redding General Plan
Goals and Policies for Geologic Resources

General Plan Goals, Policies and Objectives	Analysis
<p><u>Community Development and Design Element</u> Goal CDD3: Ensure a proper balance between development areas and the natural environment.</p>	<p>The proposed Project is not within FEMA 100 year floodplain nor the Montgomery Watson Flood Study area, as indicated by the Redding <i>General Plan</i> in Figure 4-3. Project development will largely avoid grading within areas equal to or greater than 20 percent slopes. However, grading necessary to provide appropriate access to many of the out parcels, would require grading within slope areas greater than 20 percent protected by <i>General Plan</i> Policy CDD3A, MM 5.1-2 (Section 5.1, LAND USE AND RELEVANT PLANNING) would require the Project Applicant to redesign the subdivision or eliminate those out parcels that require grading within the slope protection areas established by <i>General Plan</i> Policy CDD3A.</p>
<p>Policy CDD3A: Prohibit development in natural floodplains or on hillsides with slope areas exceeding 20 percent. Minor encroachments into these areas for new developments may be authorized without a General Plan amendment if necessary to facilitate installation of infrastructure, provide emergency-access opportunities, or otherwise facilitate construction of the project as approved by the City (See Policy NR10A). Where an entire site designated for residential use is subject to flooding or has slopes over 20 percent, a density of 1.0 dwelling units per 20 acres may be permitted by use permit subject to appropriate standards.</p>	<p>The proposed Project will be constructed in accordance with CBC seismic design parameters. A soil site class of type "C" will be used for all of the proposed buildings lots.</p>
<p>Policy HS1A: Continue to require that new structures and alterations to existing structures comply with the seismic safety requirements of the Uniform Building code (UBC); adopt updated provisions of the UBC related to seismic safety as they become available.</p> <p>Policy HS1B: Require liquefaction mitigation plans for proposed developments, including necessary infrastructure in areas determined to have a "high" liquefaction potential.</p>	<p>As shown in the Redding <i>General Plan</i>, the proposed Project is not within an area of high liquefaction potential.</p>
<p>Policy HS1C: Require determination of the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas. Utilize building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas.</p>	<p>The potential for landslides at the proposed Project has been determined to be low by <i>Preliminary Soils Report</i>. The potential for slope-instability is also considered low. The potential for erosion and the proposed Project will be mitigated by utilizing building setbacks, grading techniques, and other appropriate measures as defined by City of Redding Construction Standards and the CBC.</p>

Source: *City of Redding General Plan*, October 2000.



5.10.3 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

In accordance with State *CEQA Guidelines*, the effects of a project are evaluated to determine whether they would result in a significant adverse impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria used to determine the significance of impacts may vary depending on the nature of the project. Geologic and seismic impacts resulting from the implementation of the proposed project could be considered significant if they cause any of the following results.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving;
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; and
 - Landslides.
- Exposure of people or structures to a significant risk of loss, injury or death including flooding, as a result of the failure of a levee or a dam;
- Be located on a geologic unit or soil that is unstable, or that would become unstable and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse; and/or
- 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.

5.10.4 IMPACTS

Geology and soil impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SOIL STABILITY

5.10-1 FUTURE DEVELOPMENT OF THE PROPOSED PROJECT SITE MAY RESULT IN SUBSTANTIAL SOIL EROSION.

Impact Analysis: Construction activities include grading and clearing the site. Grading operations (required for the road system and site preparation within most lots) and the resultant manufactured embankments could increase the potential for erosion and siltation both during and after the construction phase of the proposed Project, thereby affecting potentially affecting nearby watercourses. The topography of the Project site contains areas where slopes exceed 20 percent. Preliminary plans indicate that site grading will be limited to areas outside Salt Creek and Gold Run Creek and associated riparian areas. According to the proposed site plan, there are no existing or proposed structures within 200 feet of either Salt Creek or Gold Run Creek. Approximately 114 acres will result in the grading (cut and fill) in order to facilitate street construction,



provide utilities, and create building pads for the proposed Project. The proposed modification to the surface terrain is typical to subdivision development and, based on the site soils, is not expected to alter the susceptibility of the land to unstable earth conditions or erosion. Standard grading-control measures are applicable to the proposed Project as City ordinances and other government agency regulations will be applied. The City of Redding *Grading Ordinance* requires the application of "Best Management Practices" (BMPs) in accordance with the City Erosion and Sediment Control Standards Design Manual (RMC §16.12.060, Subsections C, D, E).

The residual weathered metavolcanics are listed in the Soil Conservation Service (SCS) soil survey as having moderate to high hazard of erosion. Numerous eroded channels that have exposed the underlying indurated greenstone have been observed. These channels are generally outside of the proposed graded area. Storm drainage into these channels has a low risk of further erosion due to the soil already having entirely eroded, in as much as the flow quantity is similar to pre-existing conditions.

The hazard of erosion within the clayey gravel and cobbles of the Red Bluff Formation is described as slight to moderate for areas greater than three percent slopes, and none to slight for areas less than three percent slope. Concentrated runoff within this material is discouraged. Sheet flow is anticipated to have a low hazard of erosion.

A grading permit will be required as part of the improvement plans for the proposed Project. On-Site grading shall occur in conformance with established City engineering guidelines and shall be balanced on-site. Grading and slope contouring shall adhere to appropriate provisions as set forth in the RMC. Compliance is subject to review and approval by the City Engineer through the development review process. The overall shape, height, and grade of any cut and fill slope contour shall be developed in concert with the existing natural contours and scale of the natural terrain. The grading plan shall also reflect a contouring and landscaping program intended to control erosion. Compliance with this measure is subject to review and approval by the City Engineer through the development review process.

In addition, to mitigate the potential effects of erosion on-site, temporary and permanent erosion control measures would be required, such as the use of sandbags, hydroseeding, landscaping, and/or soil stabilizers. The contractor would be required to submit a Storm Water Pollution Prevention Plan (SWPPP), which includes erosion control measures in order to comply with the National Pollutant Discharge Elimination System (NPDES); requirements of the federal Clean Water Act (CWA). Implementation of appropriate grading measures and a SWPPP would reduce the potential impacts to less than significant levels. Prior to Improvement Plan approval a final soils report shall be prepared that incorporates recommendations of MM 5.11-1b in Section 5.11, HYDROLOGY AND WATER QUALITY, to protect the intermittent drainages, along with other sensitive water resources such as Salt Creek or Gold Run Creek, during temporary ground disturbance activities.

Mitigation Measures:

- MM 5.10-1a In conjunction with Project improvement plans, the Project Applicant shall submit a final grading plan and erosion- and sediment-control plan prepared by a licensed engineer to the City Engineer pursuant to RMC, Chapter 16.12, *Clearing, Grading, Fills and Excavations*. As required by the Code, the submittal shall include a soils report prepared by a qualified professional. The grading plan shall incorporate the measures addressing soil stability, landslides, and mine adits identified in the *Preliminary Soils Report* (December 2008),



prepared by SHN Consulting Engineers and Geologists and any additional measures recommended by the final soils report.

- MM 5.10-1b The control measures for cuts, fills, drainage, and erosion shall be designed and constructed per the final soils report and Standard Specifications for Public Works Construction (Green Book), latest edition, City Construction Standards, and the California Building Code.

Level of Significance: Less than significant impact with mitigation incorporated.

FAULT RUPTURE / SEISMIC GROUND SHAKING

5.10-2 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD NOT EXPOSE PEOPLE TO ADVERSE EFFECTS ASSOCIATED WITH RUPTURE OF A KNOWN EARTHQUAKE FAULT, OR CAUSE STRONG GROUND SHAKING DURING A SEISMIC EVENT.

Impact Analysis: Earthquakes on any of the region's active or potentially active faults could produce moderate to strong groundshaking on the proposed Project site, depending on the magnitude and location of the seismic event. However, it is possible that earthquakes on unmapped faults or very large magnitude events could result in strong ground shaking at the site that could damage infrastructure in the vicinity of the proposed Project.

There are no Alquist-Priolo special study zones that cross the proposed Project based on a review of Special Publication 42, published by the Division of Mines and Geology. The nearest potentially active fault is the Battle Creek fault, located approximately 17 miles south of the proposed Project. Recognized active faults are located greater than 50 miles from the proposed Project. The risk of surface fault rupture beneath the proposed Project is considered negligible.

The peak ground acceleration for the proposed Project for an earthquake with a 10 percent probability of exceedance within a 50-year exposure period is between 0.1g and 0.2g. This is moderately low compared to elsewhere in California, where there is a much higher density of active fault zones. The hazard of strong seismic ground shaking is not significantly different than other properties within the City. Soil materials consist of relatively thin overlying lithified rock materials within the proposed Project; therefore, the risk of amplification or resonance of seismic ground motions is low. Design of the residential structures will be performed in accordance with the latest edition of the California Building Code, in addition to the goals and policies of the *General Plan*, thereby reducing potentially significant impacts.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

LIQUEFACTION

5.10-3 FUTURE DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT SITE WOULD NOT CAUSE LIQUEFACTION.

Impact Analysis: Liquefaction potential is a combination of unconsolidated soil type and high groundwater combined with high potential seismic activity. According to the *General Plan*, areas with the highest potential for liquefaction are located along the Sacramento River and its tributaries; however, according to



Figure 4-1 (Liquefaction Potential), in the *General Plan*, the proposed Project is located south of an area considered as having high liquefaction potential.

In order for liquefaction to occur, the following are needed: granular soils (sand, silty sand, sandy silt, and some gravels); a high groundwater table; and a low density of the granular soils (usually associated with young geologic age. Qualitatively, only one of these conditions is present within the observed surface material, granular soil. A shallow groundwater table is not anticipated, and the materials are cemented, well consolidated Pleistocene or older geologic formations. The granular soil materials have a very low risk of liquefaction. Quantitative evaluations of liquefaction analyses are not necessary for the proposed Project during future subsurface exploration due to the lack of conditions necessary for liquefaction to occur. The risk of adverse effects to the proposed Project from secondary seismic effects, such as lateral spreading or coseismic settlement occurring during a large earthquake event, is negligible. Impacts are considered less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

LANDSLIDES

5.10-4 DUE TO THE EXISTING TERRAIN, IMPLEMENTATION OF THE PROPOSED PROJECT MAY EXPOSE PEOPLE TO SEISMICALLY INDUCED LANDSLIDES AND SLOPE INSTABILITY.

Impact Analysis: The proposed Project site and its surroundings contain moderately steep to very steep canyons, and areas that have 20 percent and greater slopes, which could be susceptible to landslides. According to the *General Plan*, seismically triggered landslides are possible within the westernmost part of the City of Redding. However, based on field observations, the risk of significant landslides occurring within the proposed Project is considered low for the natural ground conditions. Slope surfaces are generally smooth and planar, except where erosion has taken place, or where past mining activities have modified the landscape. The highest potential for landsliding would be within the back yards of the proposed building lots where fill materials are placed upon the existing sloping ground. Methods for keying the fill materials into the native soil are discussed in Appendix 15.8, PRELIMINARY SOILS REPORT, of this EIR. Implementation of the recommended mitigation measures below would help to reduce the potential impacts to less than significant levels.

Mitigation Measures:

MM 5.10-4 Subsurface exploration shall be performed by a licensed geotechnical engineer prior to making final geotechnical design recommendations. The final geotechnical design recommendations shall confirm or expand upon the following preliminary recommendations to the satisfaction of the City Engineer:

1. All cut and fill slopes shall be designed and graded to be no steeper than two horizontal to one vertical (2H:1V).
2. The overall stability of the proposed grading shall be evaluated at critical cross sections as determined by a geotechnical engineer. The design parameters for the soil shall be



determined based on subsurface exploration at the proposed retaining wall locations, and material testing of the fill materials.

Level of Significance: Less than significant impact with mitigation incorporated.

FLOODING

5.10-5 IMPLEMENTATION OF THE PROPOSED PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO FLOODING AS A RESULT OF THE FAILURE OF A DAM OR LEVEE.

Impact Analysis: Two major dams are located in the general vicinity of the proposed Project: Shasta Dam and Whiskeytown Dam. The anticipated inundation resulting from the unlikely failure of these dams has been documented in the City of Redding *General Plan*, Health and Safety Element. According to Figure 4-5 (Inundation Area For Shasta Dam Failure), and Figure 4-6 (Inundation Area For Whiskeytown Dam Failure), contained in the City of Redding *General Plan*, the proposed Project is shown to be outside of any inundation areas. According to this documentation, the proposed Project would not be affected by the unlikely failure of either of these dams. Additionally, there are no levees near the proposed Project. Impacts are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

EXPANSIVE SOIL

5.10-6 THE PROPOSED PROJECT IS NOT LOCATED ON SOIL THAT HAS POTENTIAL TO BE MODERATELY EXPANSIVE.

Impact Analysis: High plasticity clay soil is generally not anticipated within the proposed Project. Based on a review of the soil survey for Shasta County, the plasticity index of the weathered metavolcanics may be as high as 15 percent, with a liquid limit of 35 percent. The plasticity of the Red Bluff gravelly loam was rated at 10 percent, with a liquid limit of 28 percent. Generally, the proposed Project soil materials contain a larger percentage of sand and gravel material than clay, which reduces the potential for expansion and shrinkage. Medium plastic clays were observed within the Red Bluff formation soil exposed at the ground surface. The clay material within the weathered metavolcanics and clayey gravel material is of low to moderate plasticity. While the clay has the potential to be moderately expansive, as a whole the risk of adverse affects from expansive properties of the clayey material is low due to the high percentage of gravel material within the soil. Impacts are less than significant.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact.

MINE ADITS / TUNNELS

5.10-7 IMPLEMENTATION OF THE PROPOSED PROJECT MAY DISTURB PREVIOUSLY DISCOVERED OR UNDISCOVERED MINE ADITS / TUNNELS.



Impact Analysis: Evidence of placer mining for gold within the clayey gravels and cobbles was observed in areas of the proposed Project. The most significant area of placer mining within the area to be graded was observed at the western portion of the proposed Project area northeast of building lots 1 through 8. The risk of subsidence of the materials overlying gold lode mine tunnels is low. All of the tunnels encountered at the proposed Project are within lithified rock of the Copley Greenstone formation. The tunnels are subject to potential localized caving, but the thickness of overburden is generally deemed sufficient to bridge overburden stresses across the tunnel section. However, the potential exists that additional mine adits are present within the side slopes along Salt Creek.

The actual strike and dip of the mine tunnel at Adit J1 (Jefferson Mine) could not be confirmed during the preliminary field investigations and exploration deeper into the tunnel was not possible due to the restricted opening to the tunnel. Probing during future subsurface exploration would determine the strike and dip of the mine tunnel and identify appropriate remedial techniques, if necessary. Implementation of the recommended mitigation measures below would serve to reduce potential impacts to a less than significant level.

Mitigation Measures:

- MM 5.10-7a The strike and dip of the mine tunnel at Adit J1 (Jefferson Mine) shall be verified through subsurface exploration during on-site geotechnical investigations required by MM 5.10-4. Recommendations to appropriately close Adit J1 shall be implemented prior to commencement of grading activities.
- MM 5.10-7b Prior to recordation of the Final Subdivision Map, the Project Applicant shall retain a qualified geotechnical engineer to certify that all on site open mine entrances and other mine features have been properly closed to prevent entry. All mine features shall be properly filled and compacted to prevent any physical hazard to person or property. Should additional adits be discovered during site clearing, a qualified geologist shall be contacted to evaluate the site conditions surrounding the adit, and provide additional evaluations of risk of adverse effects to the proposed Project.

Level of Significance: Less than significant impact with mitigation incorporated.

CUMULATIVE IMPACTS

5.10-8 THE PROPOSED PROJECT, COMBINED WITH FUTURE DEVELOPMENT, WOULD NOT RESULT IN INCREASED SHORT-TERM IMPACTS SUCH AS EROSION AND SEDIMENTATION, AND LONG-TERM SEISMIC IMPACTS WITHIN THE AREA.

Impact Analysis: Cumulative effects related to geology resulting from the implementation of future development of the site and surrounding areas could expose more persons and property to potential impacts due to seismic activity. Short-term cumulative impacts such as erosion and sedimentation may occur. Long-term impacts related to geology include the exposure of people to the potential for seismically induced ground shaking. Implementation of other cumulative projects would incrementally increase the number of people and structures subject to a seismic event. Seismic and geologic significance would be considered on a project-by-project basis through the preparation of a design-level geotechnical study and such exposures would be minimized through strict engineering guidelines as they pertain to protection against known geologic hazards and potential geologic and soil related impacts.



Implementation of MM 5.10-1 through MM 5.10-7, would reduce geologic related impacts. The proposed Project will not contribute to any cumulatively considerable geologic or soils impacts. Therefore, cumulative effects of increased seismic risk would be less than significant level.

Mitigation Measures: Mitigation is incorporated on a project-by-project basis to reduce impacts to a less than significant level.

Level of Significance: Less than significant impact.



5.11 HYDROLOGY AND WATER QUALITY

The purpose of this section is to describe the hydrologic and water quality setting of the proposed Project site and surrounding area. This section contains information based on the *Preliminary Storm Drain Analysis*, dated August 2007, prepared by Sharrah Dunlap Sawyer, Inc. (refer to Appendix 15.9, PRELIMINARY STORM DRAIN ANALYSIS). The purpose of the *Preliminary Storm Drain Analysis* is to analyze the existing and post-construction hydrologic conditions of the site. This section also evaluates potential long-term and short-term water quality impacts associated with construction and long-term operation of the proposed Project.

5.11.1 EXISTING CONDITIONS

The City of Redding is situated at the far north end of the Sacramento Valley at the point where the valley meets the foothills of the Cascade mountain range. Redding is surrounded by mountains to the west, north, and east. Elevations range from about 400 feet in the lowlands adjoining the Sacramento River near Anderson to over 1,100 feet on the hilltops in the western part of the City. East of the Sacramento River, land is generally flat, and is broken only by the courses of Churn, Clover, and Stillwater Creeks. A distinctive geographic feature in the area is the Sacramento River, which flows through the City in a general north-south direction. Several creeks also run through the Redding area, eventually draining into the Sacramento River. Sixteen primary drainage basins ranging in size from 1.0 to 48.9 square miles and numerous smaller local tributaries to the Sacramento River are located within City limits.

The climate in the northern portion of the Sacramento Valley is characterized by hot, dry summers and moderately cool, wet winters. Average annual rainfall in Redding is approximately 33 inches. Redding usually experiences the majority of storm events from early November through early April. Snowfall is infrequent, seldom lasting for more than 24 hours. Rainfall depth for a 100-year return period storm event reaches approximately 2.1 inches in a 1-hour duration storm and 7.38 inches in a 24-hour duration storm. The intensity of rainfall in the area is elevation dependent, and the most intense precipitation is the result of localized cloudburst activity.

The City's storm drainage infrastructure currently includes approximately 130 miles of storm drain pipe, 174 miles of open channels, and 45 detention basins. The City has several programs that provide water quality protection, including much of the Natural Resources Element of the *General Plan*, a grading ordinance that addresses erosion and sediment control, a floodplain, combining district ordinance, a storm drain maintenance plan, and a Storm Water Quality Improvement Plan (SWQIP).

SURFACE WATER

The proposed Project is located in an area comprised of undeveloped land, residences, and commercial buildings. The property ranges in elevation from approximately 500 to 760 feet above sea level. The site consists of a relatively flat ridge top that drops sharply to the north and east, and gradually towards the southeast. The property is depicted on the United States Geological Survey (USGS) Redding, California, 7.5-minute topographic quadrangle (1969).



Approximately 3.82 acres and 31,718 linear feet of jurisdictional other waters of the U.S. and 3.73 acres of wetlands were identified in the proposed Project area, for a total of 7.55 acres of potentially jurisdictional waters of the U.S.¹

The proposed Project area terrain varies from a nearly flat terrace at the center of the site, to moderately steep to very-steep canyons that drain in all directions. In portions of the site the natural hydrology is interrupted by unimproved roadways. The proposed Project area generally drains northwest towards the Sacramento River.

The majority of the proposed Project area is drained by surface percolation, overland sheet flow, ephemeral and intermittent drainages that convey flow to larger drainages. The proposed Project area contains two large drainages, Salt Creek and Gold Run Creek, which are at the edges of the proposed Project area. In general, these drainages are fed primarily by surface water derived from direct precipitation and input from intermittent and ephemeral drainages. Additionally, due to the high level of erosion within the project area there are several non-jurisdictional swales and gullies present. These non-jurisdictional swales and gullies are primarily present in the canyons and along roadways where overland sheet flow is high.

Both Salt Creek and Gold Run Creek flow through steep terrain with 25 to 40 foot high slopes. Figure 5.11-1, SLOPES 20 PERCENT AND GREATER, shows the adjacent property to each creek and the areas of slopes greater than 20 percent on each side of the bank. The southern banks of Gold Run Creek are defined by 20 percent slopes for over 100 feet of the creek flowline. As seen in Figure 3-3, AERIAL PHOTOGRAPH, there are no existing or proposed structures within 200 feet of either creek.

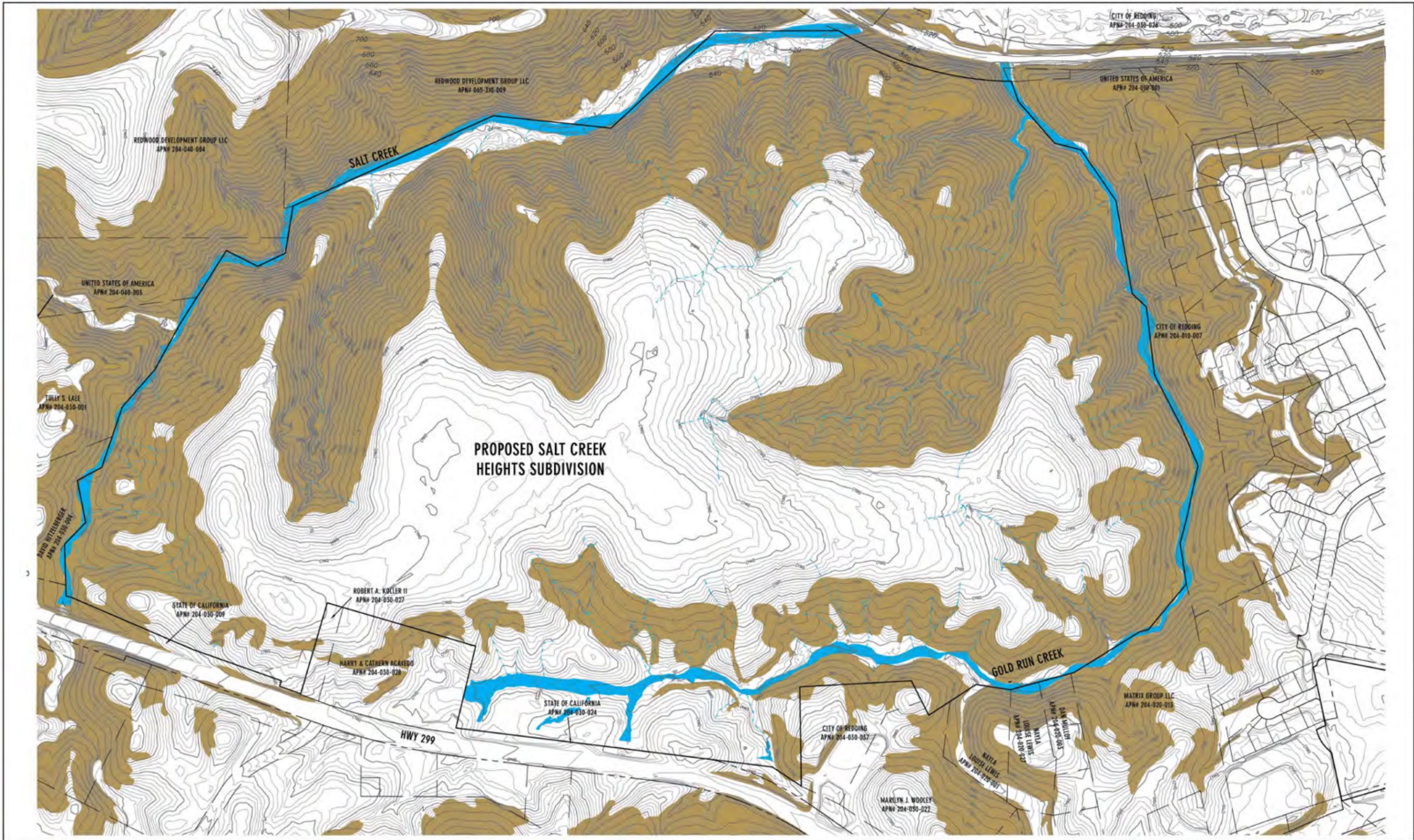
WATER QUALITY

Surface water quality is subject to federal, state, and local water quality requirements that are administered and enforced by the EPA, the California State Water Resources Control Board (SWRCB), and the California Regional Water Quality Control Board (RWQCB), with cooperation from each county.

The principal law governing pollution of the nation's surface waters is the federal Water Pollution Control Act (Clean Water Act [CWA]). Originally enacted in 1948, it was amended in 1972 and has remained substantially the same since. The CWA consists of two major parts: provisions that authorize federal financial assistance for municipal sewage treatment plant construction and regulatory requirements that apply to industrial and municipal dischargers. The CWA authorizes the establishment of effluent standards on an industry basis. The CWA also requires states to adopt water quality standards that "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."

To achieve its objectives, the CWA is based on the concept that all discharges into the nation's waters are unlawful, unless specifically authorized by a permit. The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the United States under Section 402 of the CWA. Thus, industrial and municipal dischargers (point source discharges) must obtain NPDES permits from the appropriate RWQCB (i.e., the Central Valley region). The existing NPDES (Phase I) stormwater program requires municipalities serving more than 100,000 persons to obtain an NPDES stormwater permit for any construction project larger than five acres. Proposed NPDES stormwater regulations (Phase II) expand this existing national program to smaller municipalities with populations of

¹ *Wetland Delineation*, ESA, October 2007.



Source: Sharrah Dunlap Sawyer, Inc., 8/30/07.



LEGEND

	20% Slope and Greater
	Wetlands

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR
Slopes 20 Percent and Greater

Figure 5.11-1



10,000 persons or more and construction sites that disturb greater than one acre. For other dischargers, such as those affecting groundwater or from non-point sources, a Report of Waste Discharge must be filed with the RWQCB. For specified situations, some permits may be waived and some discharge activities may be handled through inclusion in an existing general permit. While the U.S. Environmental Protection Agency (EPA) has two permitting options to meet NPDES requirements (individual permits and general permits), the SWRCB has elected to adopt one statewide General Permit for California that applies to all construction-related storm water discharges, except for those on tribal lands, in the Lake Tahoe Hydrologic Unit, and under the control of the California Department of Transportation (Caltrans).

Construction activity subject to this General Permit includes any clearing, grading, stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. Construction activities disturbing less than one acre are still subject to this permit if the activity is part of a large common plan of development or if significant water quality impairment will result from the activity.

The General Permit requires all dischargers whose construction activity disturbs one acre or more to:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) to prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters;
- Eliminate or reduce nonstormwater discharge to storm sewer systems and other waters of the United States; and
- Perform inspections of all BMPs.

STORM WATER POLLUTION PREVENTION PLAN

The SWPPP has two major objectives: 1) to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges, and 2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in both stormwater and in non-stormwater discharges.

BMPs include activities, practices, maintenance procedures, and other management practices that reduce or eliminate pollutants in stormwater discharges and authorized nonstormwater discharges. BMPs include treatment requirements, operation procedures, and practices to control site runoff, spillage, leaks, waste disposal and drainage from raw materials storage. BMP implementation must take into account changing weather conditions and construction activities, and various combinations of BMPs may be used over the life of the project to maintain compliance with the CWA. The General NPDES Permit gives the owner the discretion to determine the most economical, effective, and innovative BMPs to achieve the performance-based goals of the General NPDES Permit.

There are two categories of BMPs: structural and non-structural. Structural BMPs are the specific construction, modification, operation, maintenance, or monitoring of facilities that would minimize the introduction of pollutants into the drainage system, or would remove pollutants from the drainage system. Non-structural BMPs are activities, programs, and other nonphysical measures that help reduce pollutants from non-point sources to the drainage system. In general, nonstructural BMPs are source control measures.

The issue of pollution in stormwater and urban runoff has been recognized by both federal and state agencies, and there has been a growing concern regarding activities that discharge water affecting California's surface



water, coastal waters, and groundwater. Discharges of water are classified as either point source or non-point source discharges. A point source discharge usually refers to waste emanating from a single, identifiable point. Regulated point sources include municipal wastewater, oil field wastewater, winery discharges, solid waste sites, and other industrial discharges. Point source discharge must be actively managed to protect the state's waters. A non-point source discharge usually is a waste emanating from diffused locations. As a result, specific sources of non-point source pollution may be difficult to identify, treat, or regulate. The goal is to reduce the adverse impact of non-point source discharges on water resources through better management of these activities. Non-point sources include drainage and percolation from a variety of activities such as agriculture, forestry, recreation, and storm runoff.

NON-POINT SOURCE POLLUTANTS

A net effect of urbanization can be to increase pollutant export over naturally occurring conditions. The impact of the higher export can be on the adjacent streams and also on the downstream receiving waters. However, an important consideration in evaluating stormwater quality from a project is to assess whether it impairs the beneficial uses of the receiving waters. Receiving waters can assimilate a limited quantity of various constituent elements; however, there are thresholds beyond which the measured amount becomes a pollutant and results in an undesirable impact. Non-point source pollutants have been characterized by the following major categories in order to assist in determining the pertinent data and its use. The backgrounds of these standard water quality categories provide an understanding of typical urbanization impacts.

Sediment

Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is the major pollutant by volume in surface water. Suspended soil particles can cause the water to look cloudy or turbid. The fine sediment particles also act as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons. Construction sites are the largest source of sediment for urban areas under development. Another major source of sediment is stream bank erosion, which may be accelerated by increases in peak rates and volumes of runoff due to urbanization.

Nutrients

Nutrients are a major concern for surface water quality, especially phosphorous and nitrogen. The orthophosphorous form of phosphorus is readily available for plant growth. The ammonium form of nitrogen can also have severe effects on surface water quality. The ammonium is converted to nitrate and nitrite forms of nitrogen in a process called nitrification. This process consumes large amounts of oxygen, which can impair the dissolved oxygen levels in water. The nitrate form of nitrogen is very soluble and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching groundwater. Orthophosphate from auto emissions also contributes phosphorus in areas with heavy automobile traffic. As a general rule of thumb, nutrient export is greatest from development sites with the most impervious areas. Other problems resulting from excess nutrients are 1) surface algal scums; 2) water discolorations; 3) odors; 4) toxic releases; and 5) overgrowth of plants. Common measures for nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate, and total organic carbon (TOC).



Trace Metals

Trace metals are primarily a concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. The most common trace metals found in urban runoff are lead, zinc, and copper. Fallout from automobile emissions is also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff are attached to sediment. This effectively reduces the level which is immediately available for biological uptake and subsequent bioaccumulation. Metals associated with the sediment settle out rapidly and accumulate in the soils. Also, urban runoff events typically occur over a shorter duration, which reduces the amount of exposure and could be toxic to the aquatic environment. The toxicity of trace metals in runoff varies with the hardness of the receiving water. As total hardness of the water increases, the threshold concentration levels for adverse effects increases.

Oxygen-Demanding Substances

Aquatic life is dependent on the level of dissolved oxygen (DO) in water. When organic matter is consumed by microorganisms, DO is consumed in the process. A rainfall event can deposit large quantities of oxygen-demanding substances in lakes and streams. The biochemical oxygen demand of typical urban runoff is on the same order of magnitude as the effluent from an effective secondary wastewater treatment plant. A DO problem arises when the rate of oxygen-demanding material exceeds the rate of replenishment. Oxygen demand is estimated by the direct measure of DO and indirect measures such as biochemical oxygen demand (BOD), chemical oxygen demand (COD), oils and greases, and total organic carbon (TOC).

Bacteria

Bacteria levels in undiluted urban runoff exceed public health standards for water contact recreation almost without exception. Studies have found that total coliform counts exceeded EPA water quality criteria at almost every site and almost every time it rained. The coliform bacteria that are detected may not be a health risk in themselves, but are often associated with human pathogens.

Oil and Grease

Oil and grease contain a wide variety of hydrocarbons, some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become attached to it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations. Residential land uses generate less hydrocarbons export, although illegal disposal of waste oil into stormwater can be a local problem.

Other Toxic Chemicals

Priority pollutants are generally related to hazardous wastes or toxic chemicals and can be sometimes detected in stormwater. Priority pollutant scans have been conducted in previous studies of urban runoff, which evaluated the presence of over 120 toxic chemicals and compounds. The scans rarely revealed toxins that exceeded the current safety criteria. The urban runoff scans were primarily conducted in suburban areas not expected to have many sources of toxic pollutants (with the possible exception of illegally disposed or applied household hazardous wastes). Measures of priority pollutants in stormwater include: 1) phthalate



(plasticizer compound); 2) phenols and creosols (wood preservatives); 3) pesticides and herbicides; 4) oils and greases; and 5) metals.

PHYSICAL CHARACTERISTICS OF SURFACE WATER QUALITY

Standard parameters used to assess the quality of stormwater provide a method of measuring impairment. The backgrounds of these typical characteristics assist in understanding water quality requirements. The quantity of a material in the environment and its characteristics determine the degree of availability as a pollutant in surface runoff. In an urban environment, the quantity of certain pollutants in the environment is a function of the intensity of the land use. For instance, high density of automobile traffic makes a number of potential pollutants (such as lead and hydrocarbons) more available. The availability of a material, such as a fertilizer, is a function of the quantity and the manner in which it is applied. Applying fertilizer in quantities that exceed plant needs leaves the excess nutrients available for loss to surface or groundwater.

The physical properties and chemical constituents of water have traditionally served as the means for monitoring and evaluating water quality. Evaluating the condition of water through a water quality standard refers to its physical, chemical, or biological characteristics. Water quality parameters for stormwater make up a long list and are classified in many ways. In many cases, the concentration of an urban pollutant, rather than the annual load of that pollutant, is needed to assess a water quality problem. Some of the physical, chemical, or biological characteristics that evaluate the quality of the surface runoff are outlined below.

Dissolved Oxygen (DO)

DO in the water has a pronounced effect on the aquatic organisms and the chemical reactions that occur. It is one of the most important biological water quality characteristics in the aquatic environment. The DO concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure, and biological activity. Dissolved oxygen is a transient property that can fluctuate rapidly in time and space. Dissolved oxygen represents the status of the water system at a particular point and time of sampling. The decomposition of organic debris in water is a slow process and the resulting changes in oxygen status respond slowly also. The oxygen demand is an indication of the pollutant load and includes measurements of BOD or COD.

Biochemical Oxygen Demand (BOD)

The BOD is an index of the oxygen-demanding properties of the biodegradable material in the water. Samples are taken from the field and incubated in the laboratory at 20°C, after which the residual DO is measured. The BOD value commonly referenced is the standard five-day values. These values are useful in assessing stream pollution loads and for comparison purposes.

Chemical Oxygen Demand (COD)

The COD is a measure of the pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It can be determined quickly because it does not rely on bacteriological actions as with BOD. COD does not necessarily provide a good index of oxygen demanding properties in natural waters.



Total Dissolved Solids (TDS)

TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. There are several reasons why TDS are an important indicator of water quality. Dissolved solids affect the ionic bonding strength related to other pollutants such as metals in the water. TDS are also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influence the ability of a water body to assimilate wastes.

pH

The pH of water is the negative log, base 10, of the hydrogen ion (H^+) activity. A pH of seven is neutral; a pH greater than seven indicates alkaline water; a pH less than seven represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life and generally toxic limits are pH values less than 4.8 and greater than 9.2.

Alkalinity

Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate, and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 mg/l and ranges of alkalinity of 100-200mg/l seem to support well-diversified aquatic life.

Specific Conductance

The specific conductivity of water, or its ability to conduct an electric current, is related to the total dissolved ionic solids. Long-term monitoring of a project's waters can develop a relationship between specific conductivity and TDS. Specific conductivities in excess of 2000 iohms/cm indicate a TDS level too high for most freshwater fish.

Turbidity

The clarity of water is an important indicator of water quality that relates to the ability of photosynthetic light to penetrate. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed. Turbidity is caused by suspended clays and other organic particles. It can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations.

Nitrogen (N)

Sources of nitrogen in stormwater are from the additions of organic matter or chemical additions to water bodies. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication since nitrification consumes DO in the water. Organic nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen (N/N), a form available for plants. High concentrations of N/N in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/l of N/N is needed for algal blooms. Some fish life can be



affected when N/N exceeds 4.2 mg/l. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen include Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focuses on nitrate and ammonia.

Phosphorus (P)

Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban stormwater discharge is generally from fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Since phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement include detecting orthophosphate and total phosphorus.

5.11.2 REGULATORY FRAMEWORK

FEDERAL REGULATIONS

Clean Water Act

The CWA is a federal law that protects the nation's surface waters, including lakes, rivers, coastal wetlands, and "waters of the United States." The CWA specifies that discharges to waters are illegal, unless authorized by an appropriate permit. The permits regulate the discharge of dredged and fill materials, construction-related stormwater discharges, and activities that may result in discharges of pollutants to waters of the United States. If waters of the U.S. are located on a project site, a proposed project is likely to discharge to them, and if impacts on them are anticipated, the project must obtain a CWA Section 401 Water Quality Certification from the appropriate RWQCB.

National Pollutant Discharge Elimination System

The NPDES program is administered by the EPA, which delegates oversight in California to the Regional Water Quality Control Boards. The NPDES program provides general permits and individual permits.

The general permits are for construction projects that disturb more than one acre of land. The general permit requires the applicant to file a public Notice of Intent (NOI) to discharge stormwater and to prepare and implement a SWPPP. The SWPPP includes a site map, description of proposed activities, demonstration of compliance with applicable ordinances and regulations, and a description of BMPs that would be implemented to reduce erosion and discharge of construction-related pollutants.

Impaired Waterbodies

The CWA §303(d) and the California's Porter-Cologne Water Quality Control Act (described below) require the State to establish the beneficial uses of its State waters and to adopt water quality standards to protect those beneficial uses. Section 303(d) establishes a Total Maximum Daily Load (TMDL), which is the maximum quantity of a particular contaminant that a water body can maintain without experiencing adverse effects, to guide the application of State water quality standards. Section 303(d) also requires the State to



identify “impaired” streams (water bodies affected by the presence of pollutants or contaminants) and to establish the TMDL for each stream.

STATE REGULATIONS

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act acts in cooperation with the CWA to establish the State Water Resources Control Board (SWRCB). The SWRCB is divided into nine regions, each overseen by a RWQCB. The SWRCB, and thus each RWQCB, is responsible for protecting California’s surface waters and groundwater supplies. The Porter-Cologne Water Quality Control Act develops Basin Plans that designate the beneficial uses of California’s rivers and groundwater basins. The Basin Plans also establish narrative and numerical water quality objectives for those waters. Basin Plans are updated every three years and provide the basis of determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. The Porter-Cologne Water Quality Control Act is also responsible for implementing CWA Sections 401-402 and 303(d) to SWRCB and RWQCBs. Table 5.11-1, BENEFCIAL USES, describes the beneficial uses identified for the drainages located within the Project site.

CITY OF REDDING

City of Redding Storm Water Quality Improvement Plan

The City retains a SWQIP document that addresses the six minimum control measures for improving storm water quality as required per Water Quality Order No. 2003-0005-DWQ. This document includes information and requirements for the City’s storm water quality management program, including program history and regulatory setting, program management, receiving water characterization, program implementation, and program evaluation and reporting.

City of Redding General Plan

The elements within the City of Redding *General Plan* provide goals, policies, and implementation measures in order to reduce impacts of projects on water quality. Applicable goals relative to the Project site within these elements are listed in Table 5.11-2, CONSISTENCY ANALYSIS WITH CITY OF REDDING GENERAL PLAN GOALS AND POLICIES FOR WATER QUALITY, below, followed by a brief explanation of how the proposed Project compiles with the goals and policies.

City of Redding Grading Ordinance

RMC Chapter 16.12 addresses requirements associated with clearing, grading, fills and excavation. The ordinance sets forth rules and regulations to control clearing and grading and to prevent erosion and other environmental damage. It also establishes administrative procedures for the issuance and enforcement of permits, and provides for the approval of plans and inspection of grading and erosion-control operations.

City of Redding Construction Standards

The City of Redding has adopted a set of construction standards that are applied to the design of subdivisions and other development projects, streets, utilities and additional related items. The construction standards provide requirements for the design of storm drainage facilities, including hydraulic criteria and typical details for structures.



**TABLE 5.11-1
Beneficial Uses**

ID	Use Type	Description
AGR	Agricultural Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
COLD	Cold Freshwater Habitat	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
IND	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
MIGR	Migration of Aquatic Organisms	Uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
NAV	Navigation	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
POW	Hydropower Generation	Uses of water for hydropower generation.
REC1	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
REC2	Non-Contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing.
SPWN	Spawning, Reproduction, and/or Early Development	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
WARM	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
WILD	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.



TABLE 5.11-2
Consistency Analysis with the City of Redding General Plan Goals and Policies For Hydrology and Water Quality

General Plan Goals, Policies, and Objectives	Analysis
<p><u>Natural Resources Element</u></p>	
<p><i>Goal NR1:</i> Minimize soil-erosion and sedimentation problems resulting from development activities; improve the quality of stormwater runoff.</p>	
<p><i>Policy NR1A:</i> Establish a process for the development, review, and approval of erosion- and sedimentation-control plans of single-family residential construction and similar small projects.</p>	<p>The submittal of erosion- and sediment-control plans for prior approval is required by City standards and ordinances and by State Water Resources Control Board regulations.</p>
<p><i>Policy NR1B:</i> Require development applicants to submit and receive Public Works Department approval for erosion- and sediment-control plans prior to undertaking grading activities.</p>	<p>The submittal of erosion- and sediment-control plans for prior approval is required by City standards and ordinances and by State Water Resources Control Board regulations.</p>
<p><i>Policy NR1C:</i> Minimize soil erosion and sedimentation created during and after construction activities to the fullest extent practicable, using Best Management Practices (BMP's).</p>	<p>Adherence to this policy will be required by City standards and ordinance and by State Water Resources Control Board regulations.</p>
<p><i>Policy NR1D:</i> Make project monitoring and enforcement activities a priority to ensure that erosion-control measures are in place prior to the start of the rainy season and function properly and effectively.</p>	<p>Adherence to this policy will be required by City standards and ordinance and by State Water Resources Control Board regulations.</p>
<p><i>Policy NR1E:</i> Aggressively pursue immediate remediation when erosion damage is discovered and/or initial control measures fail.</p>	<p>The Project proponent is required to comply with applicable City and State Water Resources Control Board standards regarding remediation when erosion damage is discovered and/or initial control measures fail.</p>
<p><i>Policy NR1F:</i> Establish and levy fines for failure to comply with the requirements of the Grading Ordinance and/or an approved erosion- and sediment-control plan.</p>	<p>The Project proponent is required to comply with applicable City and State Water Resources Control Board standards.</p>
<p><i>Policy NR1I:</i> Work with Shasta County and other regional, State, and Federal agencies to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system from agriculture, golf course, and urban runoff.</p>	<p>Representatives of the proposed Project will work with the City and appropriate agencies in order to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system.</p>
<p><i>Goal NR3:</i> Preserve and protect the quantity and quality of groundwater resources within the planning area.</p>	
<p><i>Policy NR3A:</i> Provide maximum groundwater-recharge opportunities by maintaining the natural condition of waterways and floodplains to the extent feasible given flood-control requirements.</p>	<p>Though recharge opportunities are limited due to the inherent soils in the area, Salt Creek, Gold Run Creek, and their local tributaries will substantially remain in their natural condition through the proposed Project site.</p>
<p><i>Policy NR3B:</i> Comply with the Regional Water Quality Control Board's regulations and standards to maintain and improve groundwater quality in the Planning Area.</p>	<p>Adherence to this policy will be required by City standards and ordinance and by State Water Resources Control Board regulations.</p>
<p><i>Policy NR3E:</i> Work with appropriate State, Federal, and local agencies to protect, improve, and enhance groundwater quality in the region.</p>	<p>The proposed Project would utilize City of Redding water service for domestic uses and fire protection; therefore, groundwater supplies/quality would not be impacted.</p>
<p><i>Policy NR4C:</i> Work with appropriate local, State, and Federal agencies to ensure that those responsible for soil, surface-water, and/or groundwater contamination are required to initiate, monitor, and complete full remediation activities.</p>	<p>The Project Applicant will work with appropriate local, state and federal agencies to ensure that any soil, surface-water, add/or groundwater contamination is remediated, should any contamination occur.</p>



Table 5.11-2 (Continued)
Consistency Analysis with the City of Redding General Plan Goals and Policies For Hydrology and Water Quality

General Plan Goals, Policies, and Objectives	Analysis
<p>Public Facilities and Services Element Goal PF9: Avoid increases in existing 100-year flood levels. Policy PF9A: Establish the following thresholds for stormwater drainage facilities: • Design drainage facilities to convey a 100-year storm. • Until adequate regional facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins where existing development is within the 100-year floodplain. Policy PF9B: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.</p>	<p>The proposed Project has been designed to accommodate the 100-year storm event. According to the <i>Preliminary Storm Drain Analysis</i>, there would be no adverse affects due to the construction of the proposed Project considering cumulative impacts on the adjacent properties in the watershed.</p>
<p>Health and Safety Element</p>	<p>Proposed development areas (with the exception of limited street and emergency access extensions in low lying areas) will be limited to ridge line areas, and steep slope areas, valleys and stream channels will remain as open space.</p>
<p>Goal H2: Protect the lives and property of residents and visitors from flood hazards.</p>	<p>Proposed development areas are located on higher ground that is not subjected to flooding from any offsite sources.</p>
<p>Policy HS2D: Design both new development and redevelopment projects to minimize hazards associated with flooding. Policy HS2H: Require new development to demonstrate that existing and/or planned (on- or off-site) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase in peak runoff rates and flood elevations.</p>	<p>With the development of the proposed Project, the Salt Creek Basin would experience an increase in the peak 10-, 25-, and 100-year flows of 6, 4, 2 percent, respectively. The Gold Run Creek Basin would experience higher increases of 29, 26, and 21 percent in the 10-, 25-, and 100-year peak flows, respectively. Both Salt Creek and Gold Run Creek flow through steep terrain with 25 to 40 foot high slopes. There are no existing or proposed structures within 200 feet of either creek. According to the <i>Preliminary Storm Drain Analysis</i>, there would be no adverse affects due to the construction of the proposed Project considering cumulative impacts on the adjacent properties in the watershed.</p>

Source: City of Redding General Plan, October 2000.



5.11.3 STANDARDS OF SIGNIFICANCE

CEQA THRESHOLDS

In accordance with State *CEQA Guidelines*, the effects of implementing the proposed project are evaluated to determine whether they will result in a significant adverse impact on the environment. An EIR is required to focus on these effects and to offer mitigation measures that reduce or avoid any significant impacts that are identified. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project. The proposed Project could be considered to have significant impacts related to water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- 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 (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT));
- Substantially alter the existing drainage pattern of the site or area, including 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;
- 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;
- 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;
- Otherwise substantially degrade water quality;
- 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 (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- Place housing within a 100-year flood-hazards area structures which would impede or redirect flood flows (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT);
- 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 (refer to Section 5.10, GEOLOGIC RESOURCES);
- Inundation by seiche, tsunami, or mudflow (refer to Section 10.0, EFFECTS FOUND NOT TO BE SIGNIFICANT).



5.11.4 IMPACTS

Hydrologic and water quality impacts are analyzed below according to topic. Mitigation measures directly correspond with the identified impact.

SHORT TERM IMPACTS (CONSTRUCTION)

5.11-1 GRADING, EXCAVATION, AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH DEVELOPMENT OF THE PROPOSED PROJECT MAY IMPACT SURFACE WATER QUALITY. SOIL DISTURBANCE ASSOCIATED WITH CONSTRUCTION ACTIVITIES MAY CAUSE ACCELERATED SOIL EROSION AND SEDIMENTATION AND/OR THE RELEASE OF POLLUTANTS TO ADJACENT CREEKS.

Impact Analysis: Construction controls are discussed separately from other water quality management measures because they are temporary and specific to the type of construction. Construction within the Project area has the potential to produce typical pollutants such as nutrients, suspended solids, heavy metals, pesticides and herbicides, toxic chemicals related to construction and cleaning, waste materials (including wash water), paints, wood, paper, concrete, food containers, sanitary wastes, fuel, and lubricants. The greatest potential impact to water quality may exist during construction when the vegetation is removed, exposing underlying soils to erosion. Therefore, the vegetation should be left undisturbed as much as possible.

The Project site is subject to new construction grading, including buildings and structures, utility placement, and roadway construction. Excavations and embankments would be necessary to construct the building pads, street and drainage improvements, and utilities associated with project development. Construction activities could lead to temporary impacts on surface water quality in downstream segments of Salt Creek and Gold Run Creek due to the increase in sediments, the release of construction pollutants, and/or increased soil erosion. In addition, Salt Creek and Gold Run Creek may experience increased water flows due to storm water runoff. These increased flows could potentially damage the Creek's streambeds, thereby impacting salmonids and their habitat.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and has issued a statewide General Permit (Water Quality Order 99-08-DWQ) for construction activities within the State. The State General Construction Activity Storm Water Permit (CGP) is implemented and enforced by the Regional Water Quality Control Boards (RWQCBs). The CGP applies to construction activity that disturbs one acre or more, and requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that identifies Best Management Practices (BMPs) to minimize pollutants from discharging from the construction site to the maximum extent practicable. The BMPs, that must be implemented, can be categorized into two major categories: 1) erosion and sediment control BMPs, and 2) non-storm water management and materials management BMPs. Erosion and sediment control BMPs fall into four main subcategories:

- Erosion controls
- Sediment controls
- Wind erosion controls
- Tracking controls



Erosion controls include practices to stabilize soil, in order to protect the soil in its existing location and prevent soil particles from migration. Examples of erosion control BMPs are: preserving existing vegetation, mulching and hydroseeding. Sediment controls are practices to collect soil particles after they have migrated, but before the sediment leaves the site. Examples of sediment control BMPs are: street sweeping, fiber rolls, silt fencing, gravel bags, sand bags, storm drain inlet protection, sediment traps and detention basins. Wind erosion controls prevent soil particles from leaving the site in the air. Examples of wind erosion control BMPs include: applying water or other dust suppressants to exposed soils on the site. Tracking controls prevent sediment from being tracked off site via vehicles leaving the site to the extent practicable.

A stabilized construction entrance not only limits the access points to the construction site, but also functions to partially remove sediment from vehicles prior to leaving the site. Non-storm water management and material management controls reduce non-sediment related pollutants from potentially leaving the construction site to the extent practicable. The CGP prohibits the discharge of materials other than storm water and authorized non-storm water discharges (such as irrigation and pipe flushing and testing). Non-storm water BMPs tend to be management practices with the purpose of preventing storm water from coming into contact with potential pollutants. Examples of non-storm water BMPs include: preventing illicit discharges and implementing good practices for vehicle and equipment maintenance, cleaning and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include:

- Good housekeeping activities, such as covering stored materials and elevating them off the ground, in a central location.
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance.
- Providing a central location for concrete wash out and performing routine maintenance.
- Providing several dumpsters and trash cans throughout the construction site for litter/floatable management.
- Covering and/or containing stockpiled materials and overall good housekeeping on the site.

The SWRCB has also adopted a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for small MS4s covered under the CWA to efficiently regulate numerous storm water discharges under a single permit. Permittees must meet the requirements in Provision D of the General Permit which require the development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. The SWMP must include the following six minimum control measures:

- Public Education and Outreach on Storm Water Impacts
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post-Construction Storm Water Management in New Development
- Redevelopment and Pollution Prevention/Good Housekeeping for Municipal Operations

The City's SWQIP dated August 2003 addresses these minimum measures and numerous other storm water quality concerns. The design and construction of site facilities shall comply with the City's SWQIP and the statewide General Permit (Water Quality Order No. 2003-0005-DWQ). Potential short-term impacts to surface water quality would also be reduced to less than significant levels following compliance with *General*



Plan policies NR1B, NR1C, NR1D, NR1E, and NR1F. In addition to the noted *General Plan* policies, the following mitigation measures would serve to ensure that surface water quality impacts are minimized.

Mitigation Measures:

- MM 5.11-1a The Project Applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and secure a Construction Activity Storm Water Permit from the Regional Water Quality Control Board (RWQCB).
- MM 5.11-1b Prior to the beginning of any clearing, grading, or site improvement activities, with the exception of fire fuel management activities, improvement plans for grading, drainage, utilities, and other required improvements shall be approved by the Engineering Department and other concerned City of Redding departments. These plans shall be in conformance with the SWPPP and RMC Title 16, Chapter 16.12. Prior to the issuance of a clearing and/or grading permit, an Interim Erosion and Sediment Control Plan shall be included that establishes specific measures and Best Management Practices (BMPs) tailored to the Project to maximize the reduction of pollutant loading in stormwater runoff and shall be implemented to the maximum extent practicable. Grading shall be restricted to the period from April 15th to October 1st of any year unless a waiver is granted by the City Engineer.

Level of Significance: Less than significant impact with mitigation incorporated.

WATER QUALITY IMPACTS

5.11-2 IMPLEMENTATION OF THE PROPOSED PROJECT MAY RESULT IN LONG-TERM IMPACTS TO WATER QUALITY.

Impact Analysis: A net effect of urbanization can be to increase non-point pollutant export over naturally occurring conditions. The impact of the higher export would be on the adjacent streams and also on the downstream receiving waters. Receiving waters can assimilate a limited quantity of various constituent elements, but there are thresholds beyond which the measured amount becomes a pollutant and results in an undesirable impact.

The proposed Project would result in the development of approximately 145.5 acres for residential uses including a 13.9-acre neighborhood park. Residential uses typically generate pollutants such as pesticides, trash and debris, oil and grease, and bacteria and viruses. However, street surfaces are the primary source of pollution in urban areas. The street-generated pollutants typically contain atmospheric pollution, tire-wear residues, petroleum products, oil and grease fertilizer and pesticide washoffs, chemical spills, as well as animal droppings and litter types of wastes. The pollutants are washed from street surfaces by rainfall that is sufficient to produce runoff. On- and off-site drainage courses and riparian areas are not anticipated to be negatively affected by development of the proposed Project. The proposed Project would be required to incorporate measures and devices designed to minimize pollutants, debris and sediments, reducing impacts to a less than significant level.

Fourteen storm drain outfalls are proposed, as can be seen on Figure 5.11-2, DRAINAGE OUTFALL DIAGRAM. Due to the proposed Project's close proximity to the Sacramento River and its location near outlets of two watersheds, storm water detention is not being proposed. Storm drainage outfalls will be City standard outlet headwalls located in close proximity to public roads so as to be reasonably accessible for



routine maintenance. Maintenance access routes will also be per City standards for both City maintenance and Shasta Mosquito & Vector Control District's mosquito control operations. These structures would contain a minimum fifty feet buffer zone from delineated waters of the U.S. Existing natural drainage features underlain by Copley Greenstone will be used to convey storm water off-site.

A filtration and conveyance system would be constructed between each outlet headwall and the nearest stable existing geomorphic drainage feature. The width of the armored filtration and conveyance systems will be about twelve feet. The filter systems would be reviewed by the RWQCB through the 401 water quality certification process and the City so that the protection of beneficial uses is confirmed.

First-flush and low-flow runoff would pass through at least fifty feet of the sandy gravel media. This would improve the quality of the water by physical filtration of sand, silt and trash, adsorption of clay, oil and metals onto the sand particles, and biological filtration of nutrients by the micro and macro biota living within, and protected by, the reinforced sandy gravel matrix. Each outfall filtration system would be individually designed to pass the design peak flow rate, typically ten-year recurrence interval, within the armored area of the conveyance. The non-woven geotextile filter fabric would allow for maximum groundwater recharge along the length and width of the filter (600 square feet minimum at each outfall).

The filter downstream of each outfall headwall would be seeded with self-perpetuating hydrophytic native vegetation when a year-round water supply becomes available. This would generally be after the first irrigated landscaping is constructed upstream of the particular outfall. Experience has shown that the hydrophytic vegetation will self-propagate downstream to the extent that year-round water is available. Long term maintenance would consist of removing trash from the area of the standard outlet headwall as necessary.

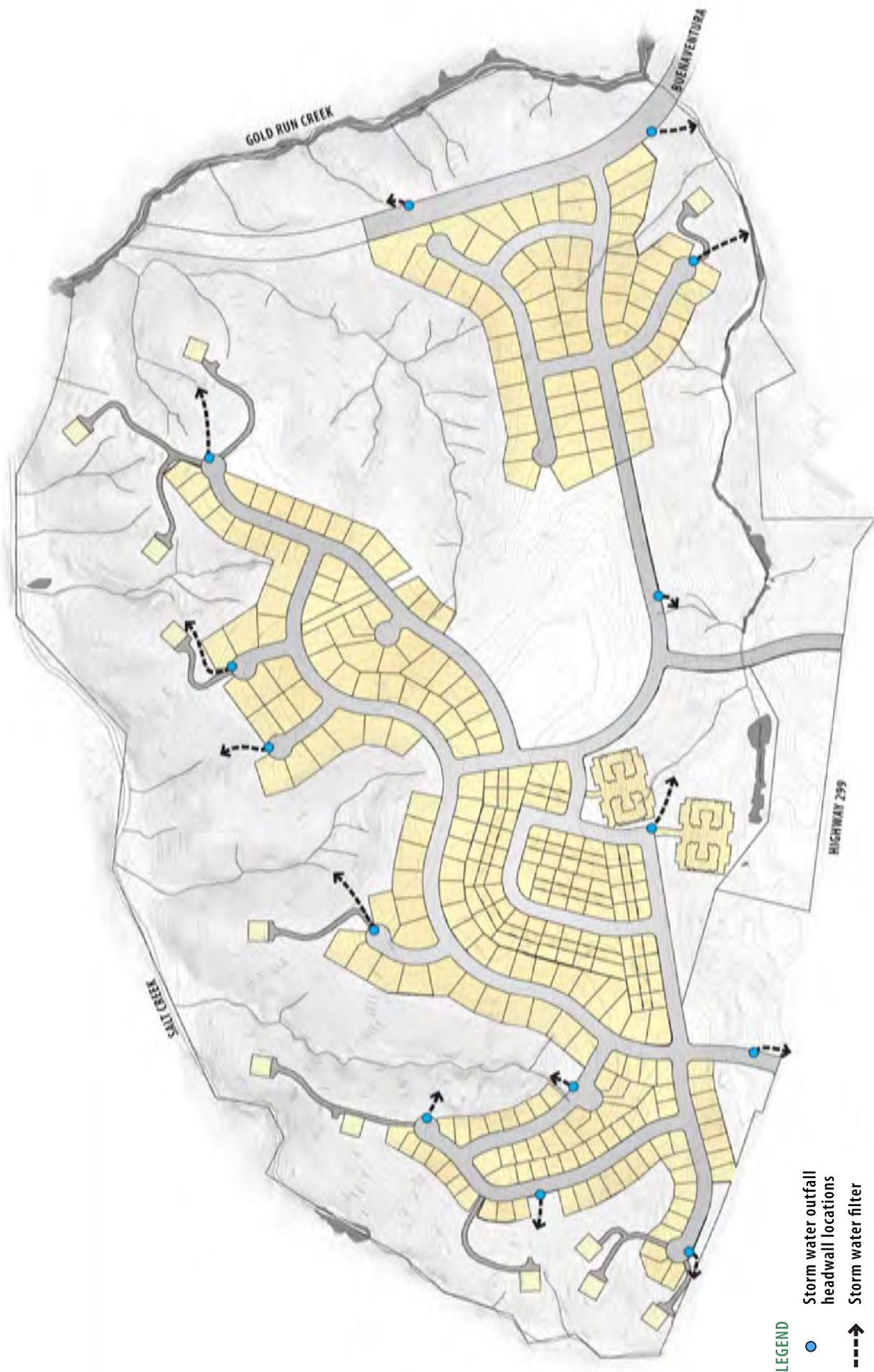
Further, potential impacts due to water quality (non-point source pollutants) impacts would be reduced to less than significant levels following compliance with *General Plan* policies NR1D, NR1E, NR1F, NR1I, NR3B, NR3E, and NR4C, which would ensure that water quality (non-point source pollutants) are minimized. In addition, the proposed Project would be served by City sanitary sewer service, therefore, the Project would not involve any permitted discharges of waste material into ground or surface waters.

Consistency with the policies contained in the *General Plan* and implementation of MM 5.11-2 would reduce impacts regarding water quality (non-point source pollutants) to less than significant levels.

Mitigation Measure:

MM 5.11-2 All storm drain facilities shall be designed to be consistent in design and intent with the City of Redding Construction Standards, the City of Redding Storm Water Quality Improvement Plan, and the City of Redding Phase II NPDES Permit from the California Regional Water Quality Control Board. Project design shall incorporate strategies to minimize the polluting of storm water both during construction and long-term.

Level of Significance: Less than significant impact with mitigation incorporated.



- LEGEND**
- Storm water outfall headwall locations
 - > Storm water filter

Source: Sharrah Dunlap Sawyer, Inc., 4/1/09.

RBF CONSULTING  not to scale
 4/2/09 JN 60-100416-15334 MAS

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND
 PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Drainage Outfall Diagram

Figure 5.11-2



STORM WATER RUNOFF

5.11-3 DEVELOPMENT OF THE PROPOSED PROJECT WOULD INCREASE STORM WATER RUNOFF RATES GENERATED BY THE PROPOSED PROJECT SITE WHEN COMPARED TO EXISTING CONDITIONS.

Impact Analysis: When land is in a natural or undeveloped condition, soils, mulch, and plant roots absorb rainwater. This absorption process is called infiltration or percolation. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates into the soil and is stored either temporarily or permanently on the surface or in underground layers of soil. When the soil becomes completely saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow on the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off a site is defined as storm water runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means, that they absorb less rainwater. Grading associated with development also eliminates many of the low-lying areas that may have been providing a degree of surface storage. As impervious surfaces are added to the ground conditions and surface drainage becomes more efficient, the natural infiltration and storage processes are reduced. As a result, the volume and rate of storm water runoff increases. The increased volumes and rates of storm water runoff may result in downstream flooding is not properly mitigated.

Development of the proposed Project area would increase rates and volumes of runoff generated by the site by introducing streets, homes/buildings, and other impervious surfaces and by providing improved onsite drainage conveyance.

The *Preliminary Storm Drain Analysis* for the proposed Project, included in Appendix 15.9 of this EIR, determined the rates of runoff produced by the local watersheds of interest under existing conditions and after development. For the hydrologic analyses, the proposed Project site was divided into two drainage basins, Salt Creek (BSALT) and Gold Run Creek (BGOLD). The model was used to simulate runoff production that would occur during storm having return periods of 10-, 25-, and 100-years. The existing conditions model assumed the site was 100 percent open oak/woodland. The proposed Project consists of single family residential, multifamily residential and a park area with over 60 percent of each basin remaining undeveloped. Development of the proposed Project would increase runoff production by creating an increase in impervious cover through the introduction of paving, rooftops and other development features along the local ridge tops. Table 5.11-3, PEAK DESIGN FLOW, below, summarizes the pre- and post development peak flows for both basins.

**TABLE 5.11-3
 Peak Design Flow**

Basin ID	10-Year Peak Flow (cfs)		25-Year Peak Flow (cfs)		100-Year Peak Flow (cfs)	
	Pre	Post	Pre	Post	Pre	Post
BSALT	193	205	258	268	401	409
BGOLD	157	203	212	268	340	413

Source: *Preliminary Storm Drain Analysis*, Sharrah Dunlap Sawyer, Inc., August 2007.



With the development of the proposed Project, the Salt Creek Basin would experience an increase in the peak 10-, 25-, and 100-year flows of 6, 4, 2 percent, respectively. The Gold Run Creek Basin would experience higher increases of 29, 26, and 21 percent in the 10-, 25-, and 100-year peak flows, respectively. Both Salt Creek and Gold Run Creek flow through steep terrain with 25 to 40 foot high slopes. Figure 5.11-1, SLOPES 20 PERCENT AND GREATER, shows the adjacent property to each creek and the areas of slopes greater than 20 percent on each side of the bank. The southern banks of Gold Run Creek are defined by 20 percent slopes for over 100 feet of the creek flowline. As seen in Figure 3-4a, TENTATIVE SUBDIVISION MAP, in Section 3.0, PROJECT DESCRIPTION, there are no existing or proposed structures within 200 feet of either creek. According to the *Preliminary Storm Drain Analysis*, there would be no adverse affects due to the construction of the proposed Project considering cumulative impacts on the adjacent properties in the watershed.

Mitigation Measures: No mitigation measures are required.

Level of Significance: Less than significant impact

CUMULATIVE IMPACTS

5.11-4 **THE PROPOSED PROJECT, IN COMBINATION WITH OTHER CUMULATIVE PROJECTS, WOULD NOT RESULT IN INCREASED DEGRADATION OF SURFACE AND GROUNDWATER QUALITY IN THE AREA.**

Impact Analysis: Cumulative effects related to water quality resulting from implementation of the proposed Project, along with development in the vicinity, may expose more persons and property to potential water quality hazards. Cumulative development may also adversely affect downstream water quality, thereby impacting surface and groundwater supplies.

Construction activities associated with cumulative development projects within the City would result in disturbance to surface soils and potential for erosion. Additionally, runoff from construction sites would be typical of urban uses and may include silt and sediment, oil and grease, floatable trash, nutrients (such as fertilizers), heavy metals, pathogens (such as coliform bacteria), and other substances. Additionally, new development within the City would involve an increase in impervious surfaces, which in turn increase stormwater runoff in the City. This increased runoff could exceed the capacity of existing infrastructure. Future development projects would be required to comply with State regulations, consisting of preparation of a SWPPP, implementation of BMPs, and requirements of the NPDES Permit. Additionally, the RMC includes grading requirements. New development projects would also be required to implement improvements identified in the City's *Drainage Master Plan* in order to ensure adequate storm drain capacity. Implementation of these regulations and requirements would reduce potential impacts on water quality, waste discharge, runoff, erosion, and siltation to less than significant for overall cumulative impacts.

Construction and operation of the proposed Project could result in impacts to water quality, waste discharge, runoff, erosion, and/or siltation. Pursuant to the CWA, the proposed Project would be required to obtain a Section 401 and Section 404 Permit. Culverts, storm drains, and other runoff conveyance facilities associated with the proposed Project would have a design capacity adequate to operate under projected runoff and debris loads. Compliance with the permit requirements and implementation of MM 5.11-1 through MM 5.11-2 would reduce short term impacts on water quality, waste discharge, runoff, erosion, and/or siltation. Incorporation of MM 5.11-2 for post construction BMPs would serve to reduce long-term water quality



impacts to less than significant levels. Therefore, the Project would not significantly contribute to cumulative impacts in this regard.

Mitigation Measures: Refer to MM 5.11-1 through 5.11-2.

Level of Significance: Successful implementation of mitigation measures identified for this Project, combined with adherence with applicable City of Redding design and development standards related to water quality on a project-by-project basis, would serve to reduce potential cumulative water quality impacts to less than significant levels.



SECTION 6.0: Long-Term Implications of the Proposed Project





6.0 LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

6.1 THE RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

If the proposed Project is approved and constructed, a variety of short-term and long-term impacts would occur on a local level. During Project grading and construction, portions of surrounding land uses may be temporarily impacted by increased dust and noise. Short-term soil erosion may occur during grading. There may also be an increase in vehicle pollutant emissions caused by grading and construction activities. However, these disruptions would be temporary, and may be avoided or lessened to a large degree through mitigation cited in this EIR and through compliance with the City of Redding *Municipal Code* (RMC).

Ultimate development of the Salt Creek Heights Subdivision project would create long-term environmental consequences associated with development of previously vacant land. Development of the proposed Project and the subsequent long-term effects may impact the physical, aesthetic, and human environments. Long-term physical consequences of development include increased traffic volumes, increased noise from Project-related mobile (traffic) and stationary (mechanical and landscaping) sources, incremental increased demands for public utilities, and increased energy and natural resource consumption.

6.2 IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Implementation of the proposed Project would result in the development of approximately 145.5 acres of residential uses on the 272.9 acre site. The development of the Project site would constitute a permanent commitment of land that would be physically altered to residential development and support infrastructure. It is unlikely that circumstances would arise that would justify the return of the land to its original condition. Alteration of the proposed Project site is consistent with the land use designation, goals, objectives, and policies of the City of Redding *General Plan*.

Development of the proposed Project site would irretrievably commit building materials and energy to the construction and maintenance of buildings and infrastructure proposed. Nonrenewable and limited resources that would likely be consumed as part of Project site development would include, but not be limited to: oil, natural gas, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials.

The proposed Project would result in an increased demand on public services and utilities, including: water resources, wastewater treatment, solid waste services, electric, natural gas, telephone and cable services. In addition, Project implementation would cause increases in vehicular activity in the surrounding transportation and circulation system, resulting in associated increases in air pollutant emissions and noise levels.



6.3 GROWTH-INDUCING IMPACTS

Section 15126 of the State *CEQA Guidelines* requires that an EIR discuss the Project's potential to foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The State *CEQA Guidelines* also indicate that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. This section analyzes potential growth-inducing impacts, based on criteria suggested in the State *CEQA Guidelines*.

In general terms, a project may foster spatial, economic, or population growth in a geographic area if it meets any one of the following criteria:

- Removal of an impediment to growth (e.g., establishment of an essential public service and provision of new access to an area);
- Fostering of economic expansion or growth (e.g., changes in revenue base and employment expansion);
- Fostering of population growth (e.g., construction of additional housing), either directly or indirectly;
- Establishment of a precedent-setting action (e.g., an innovation, a change in zoning, and general plan amendment approval); or
- Development of or encroachment on an isolated or adjacent area of open space (being distinct from an in-fill project).

Should a project meet any one of the above-listed criteria, it may be considered growth-inducing. The potential growth-inducing impacts of the proposed Project are evaluated below against these criteria.

Note that the State *CEQA Guidelines* require an EIR to "discuss the ways" a project could be growth-inducing and to "discuss the characteristics of some projects that may encourage...activities that could significantly affect the environment." However, the State *CEQA Guidelines* do not require that an EIR predict (or speculate) specifically where such growth would occur, in what form it would occur, or when it would occur. The answers to such questions require speculation, which CEQA discourages; refer to State *CEQA Guidelines* §15145.

POPULATION, HOUSING, AND EMPLOYMENT

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

Population

The City's 2000 population was an estimated 80,865 persons, which is an increase of 14,403 persons since 1990. As of January 1, 2004, the City's population was estimated at 87,280 persons. Holding capacity for



the City is established as 88,422 dwelling units for a total population of 223,706. The US Census estimates the City's total population in 2005 at 89,362 persons. According to the Department of Finance (2009), as of January 1, 2007, the City's 2007 population was estimated at 89,682 persons, and as of January 1, 2008, the City's population was estimated at 90,491 persons. The 2009 population estimate is 90,898 persons, totaling a 0.8 percent change in population between the years 2008 and 2009.¹ Additionally, population and growth projections for the City of Redding are identified in the 2003 Housing Element. The 2003 Housing Element projected a 2020 population for the City of 113,500.

Based on the average household size as recorded in the United States Census, the proposed residential uses would result in a direct population increase of approximately 1,069 persons (440 households x 2.43 persons per household = 1,069 persons).²

Housing

According to the Census 2000, the total housing stock in the City of Redding was an estimated 33,802 housing units. This is approximately 24 percent more than the estimated 27,238 housing units reported in the Census 1990. According to the Department of Finance (2009), in January 2009, the City's housing stock was an estimated 36,316 housing units and its vacancy rate was 5.03 percent.³ Of the City's housing stock, approximately 26 percent is multiple-family units and 72 percent is single-family units. Further, approximately 47 percent of the City's available housing stock is less than 20 years old. The number of additional dwelling units that can be accommodated under the City's *Zoning Ordinance*, based on an analysis of vacant residentially zoned properties in the City, is 33,734 dwelling units.

Employment

In 2000, the City of Redding's civilian labor force consisted of approximately 36,618 persons. At the time of the Census, an estimated 4.5 percent (2,834 persons) of the City's civilian labor force was unemployed. Most of the City's labor force (31.9 percent) was employed in management, professional, and related occupations; a substantial portion was in sales and office occupations (29.0 percent). According to the 2005-2007 American Community Survey 3-Year Estimates, the City of Redding civilian labor force consisted of approximately 43,352 persons, with an estimated 9.1 percent unemployment rate.⁴

¹ California Department of Finance. E-1 City/County Population Estimates - January 1 2008 and 2009. Accessed May 10, 2009. Available at: [http://www.dof.ca.gov/research/demographic/reports/estimates/e-1 2008-09/](http://www.dof.ca.gov/research/demographic/reports/estimates/e-1%2008-09/)

² California Department of Finance. E-5 City/County Population and Housing Estimates, 1/1/2009. Accessed May 11, 2009. Available at: <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2009/documents/2009/>

³ Ibid.

⁴ U.S Census Bureau. 2005-2007 American Community Survey 30-Year Estimates. Accessed May 11, 2009. Available at: <http://factfinder.census.gov/servlet/ADPTable>



Growth Effects of the Project

The impacts associated with increased growth are typically “population-based” impacts, such as increased traffic, noise, aesthetic concerns, and the provision of additional public facilities. Development of the Project site would result in the extension of infrastructure facilities, but only to serve the Project site itself. Implementation of the proposed Project would not indirectly stimulate additional or new growth in the project area or the City.

In addition, the Project site is consistent with the designated residential development in the City of Redding *General Plan*. Thus, the proposed Project would not directly support or stimulate growth that is not accommodated by the *General Plan*.

The location of future growth would continue to be controlled by the City and County land use planning agencies as guided by their adopted General Plans. Therefore, the proposed Project would not have a significant growth-inducing effect.



SECTION 7.0: Alternatives to the Proposed Action



7.0 ALTERNATIVES TO THE PROPOSED PROJECT

The *California Environmental Quality Act* (CEQA) requires that an EIR include a discussion of reasonable project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives” (State *CEQA Guidelines* §15126.6). This chapter identifies potential alternatives to the proposed Project and evaluates them, as required by CEQA.

Key provisions of the State *CEQA Guidelines* on alternatives (§15126.6(a) through (f)) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- *“The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (§15126.6(b)).*
- *“The specific alternative of ‘no project’ shall also be evaluated along with its impact” (§15126.6(e)). “The no project analysis shall discuss the existing conditions at the time the Notice of Preparation is published, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (§15126.6(e)(2)).*
- *“The range of alternatives required in an EIR is governed by a ‘rule of reason’ that require the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project” (§15126.6(f)).*
- *“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, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (§15126.6(f)(1)).*
- *For alternative locations, “only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR” (§15126.6(f)(2)(A)).*
- *“An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (§15126.6(f)(3)).*

Per the State *CEQA Guidelines* §15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

For each alternative, the analysis: 1) describes the alternative; 2) analyzes the impact of the alternative as compared to the proposed Project; 3) identifies the impacts of the Project which would be avoided or



lessened by the alternative; 4) assesses whether the alternative would meet most of the basic Project objectives; and 5) evaluates the comparative merits of the alternative and the Project.

7.1 PROJECT OBJECTIVES

As described in Section 3.4, PROJECT OBJECTIVES, the following objectives have been established for the proposed Project and will aid decision makers in the review of the Project and associated environmental impacts:

- Support a mixture of housing types and designs within the overall density allowed by the *General Plan*;
- Create distinct housing type areas with common design characteristics to foster neighborhood cohesiveness;
- Provide a centrally located, easily accessible neighborhood park situated in a way that minimizes potential impacts to adjacent residences;
- Create a balance between development and the natural environment by minimizing disturbance of sensitive land forms and habitats; and
- Integrate a safe and efficient neighborhood street and pedestrian system.

7.2 ALTERNATIVE ELIMINATED FROM FURTHER CONSIDERATION

The Alternative discussed below was identified but eliminated from further review based upon State *CEQA Guidelines* §15126.6(c), which states: “The EIR should also identify any alternatives that were considered . . . but rejected as infeasible during the scoping process 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.”

“OFFSITE” ALTERNATIVE

This Alternative considers that the land uses planned for the proposed Project would be achieved elsewhere in the City, without development of the proposed Salt Creek Heights Subdivision site. These impacts may be of much greater magnitude because the “Offsite” Alternative would not necessarily be developed consistent with *General Plan* goals for development in the identified Project area, which is designated for residential development.

The City of Redding, through its *General Plan*, provides for the orderly and planned development of the City, permitting the City to meet its housing goals, enhancing the City’s employment base, allowing for the efficient provision of services, and protection of resources. The Project site is planned for development of residential uses in the *General Plan*. The impacts identified for this Project are primarily associated with aesthetics, light and glare, noise, air quality, and traffic. The land uses proposed for the Project would be placed elsewhere in the community, thus placing residential development in an area that could encourage growth inducement, sprawl, and the inefficient extension of urban services. In addition, the planned



residential use of the site would remain even if this Project were to occur elsewhere. Relocation of the development to another location would transfer the traffic to that location, possibly where the *General Plan* Circulation Element did not anticipate the need to enhance the surrounding infrastructure, thus providing even greater traffic impacts. Furthermore, any development of the size and type proposed by the Applicant would have similar impacts on aesthetics, noise, air quality. Therefore, moving the Project land uses to another site could result in similar impacts and may not contribute to minimizing, reducing, or avoiding potentially significant impacts. Lastly, this Alternative would not meet the basic objectives of the Project. For all of these reasons, an “Offsite” Alternative was eliminated from further review.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

The following five alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the Project, but which may avoid or substantially lessen any of the significant impacts of the proposed Project. The “Environmentally Superior” Alternative, as required by CEQA, is described in Section 7.4, “ENVIRONMENTALLY SUPERIOR” ALTERNATIVE. These alternatives are analyzed in detail below:

- “No Project/No Development” Alternative
- “No Project/Development in Accordance with Existing General Plan/Zoning Designations” Alternative (Increased Density)
- “Site Plan Alternative 1”
- “Site Plan Alternative 2”
- “Site Plan Alternative 3”(Reduced Density)

Table 7-1, SUMMARY OF DEVELOPMENT ALTERNATIVES, provides a summary of the relative impacts and feasibility of each Alternative. A complete discussion of each Alternative is provided below.

**TABLE 7-1
 Summary of Development Alternatives**

Alternative	Description	Summary of Analysis
Proposed Project	<ul style="list-style-type: none"> • 440 total residential units on approximately 272.9 acres (approximately 145 acres of buildable area; however, after power line easements, the buildable land is approximately 119 acres); 248 SFR units, 96 clustered SFR units, and 96 apartment units • 13.9 acre neighborhood park dedication • Total site area impacted by grading: 114 acres • Total open space preservation: approximately 142.8 acres 	



SALT CREEK HEIGHTS SUBDIVISION
Tentative Subdivision Map Application S-15-07, Rezone Application RZ-6-07,
and Planned Development Plan PD-11-07
SCH: 2008092020

<p>No Project/No Development</p>	<ul style="list-style-type: none"> • No rezone or development • Existing conditions on the approximate 272.9 acres are maintained 	<ul style="list-style-type: none"> • Required by CEQA • Avoids need for rezone • Avoids significant impacts • Does not meet Project objectives
<p>No Project/Development in Accordance with Existing General Plan/Zoning Designations (Increased Density)</p>	<ul style="list-style-type: none"> • Approximately 145 gross acres buildable area (approximately 119 acres after excluding power line easement) • 25 acres zoned "RS-2" and 94 acres zoned "RM-9" • 13.9 acre neighborhood park dedication • Total unit yield with existing <i>General Plan</i> / Zoning Designations = 836 units • Total open space preservation: approximately 153 acres 	<ul style="list-style-type: none"> • No rezone application • Does not lessen impacts • Does not meet all Project objectives
<p>Site Plan Alternative 1</p>	<ul style="list-style-type: none"> • Approximately 145 gross acres buildable area (approximately 119 acres after excluding power line easement) • 564 detached SFR units (traditional lots and garden-courts) on approximately 124 acres • Limited housing types • 25-acre neighborhood park provided, but majority of park encumbered by power lines (which is unacceptable to the City) • Total site area impacted by grading: 124 acres • Total open space preservation: approximately 148 acres 	<ul style="list-style-type: none"> • Does not avoid significant environmental impacts • Increases the severity of some environmental impacts • Does not conform to circulation component of <i>General Plan</i> (does not allow for Buenaventura Boulevard extension)
<p>Site Plan Alternative 2</p>	<ul style="list-style-type: none"> • Approximately 145 gross acres buildable area (approximately 119 acres after excluding powerline easement) • 519 detached SFR units (traditional lots and garden court product) on approximately 112 acres • Limited housing types • No neighborhood park provided • Total site area impacted by grading: 112 acres • Total open space preservation: approximately 160 acres 	<ul style="list-style-type: none"> • Does not conform to circulation component of <i>General Plan</i> (does not allow for Buenaventura Boulevard extension) • Areas of significant grading and impacts to waters of the U.S. • Increases some environmental impacts
<p>Site Plan Alternative 3 (Reduced Density)</p>	<ul style="list-style-type: none"> • Approximately 145 gross acres buildable area (approximately 119 acres after excluding power line easement) • 347 detached SFR lots on approximately 113 acres • One product type • No neighborhood park provided • Total site area impacted by grading: 113 acres • Total open space preservation: approximately 159 acres 	<ul style="list-style-type: none"> • May lessen some impacts • Does not conform to <i>General Plan</i> or Zoning (no multi-family component) • Does not conform to circulation component of <i>General Plan</i> (does not allow for Buenaventura Boulevard extension)

SFR =Single Family Residential
RS-2 = Residential Single Family
RM-9 = Residential Multiple Family



7.3.1 “NO PROJECT/NO DEVELOPMENT” ALTERNATIVE

DESCRIPTION OF ALTERNATIVE

The “No Project/No Development” Alternative assumes the proposed Project would not be implemented and land uses and other improvements would not be constructed. The existing Project site would remain unaltered and in its current condition. All infrastructure improvements including water, wastewater, drainage, and circulation facilities identified in the proposed Project would not be constructed. Because the Project site would remain unchanged, few or no environmental impacts would occur. This Alternative serves as the baseline against which to evaluate the effects of the proposed Project and other Project Alternatives. It should be noted that the “No Project/No Development” Alternative does not preclude development of the site in the future.

IMPACTS COMPARED TO PROJECT IMPACTS

An evaluation of the potential environmental impacts of the “No Project/No Development” Alternative, as compared to those of the proposed Project, is provided below.

Land Use and Relevant Planning

The “No Project/No Development” Alternative would have no impacts to land use as the land would remain in its current state. This Alternative would not require a rezone; therefore, the existing *General Plan* designations - "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", and "Greenway" (GWY), and zoning designations - "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space), would remain. Continuation of the current use of the land would not conflict with any land use plan or policy, or conflict with any habitat or community conservation plan. Although the proposed Project has limited land use impacts that are mitigated, potential conflicts with *General Plan* Policy CDD3A would be avoided under this Alternative.

Public Health and Safety

Under the “No Project/No Development” Alternative, the existing environmental conditions, including those that may be defined as either adverse or significant, would continue to prevail. Additionally, the potential benefits associated with the proposed Project including the closure of mine adits would be forgone. Under this Alternative, public health and safety impacts related to Project construction and operations would also not occur. Wildland fire hazards would remain as currently existing on the proposed Project site. Although the potential for wildland fires would still be possible, impacts to persons or property would be much less than the proposed Project, as there would be fewer homes and persons on the site. Therefore, the impact from wildland fires is less than the proposed Project.

Aesthetics, Light and Glare

Under the “No Project/No Development” Alternative, the on-site topography, vegetation, and off-site view corridors would not be modified from their existing state. Visual impacts from the off-site views along the Buenaventura Trail, as well as the change in character/quality from the residents to the east (i.e., vegetation removal and grading) would be eliminated. Also, resultant light and glare impacts associated with the proposed neighborhood park and residential development would be avoided under this Alternative.



Therefore, under this Alternative, impacts regarding aesthetics, light, and glare would be eliminated compared to the proposed Project.

Traffic and Circulation

This Alternative would not result in changes to average daily vehicle trips (ADT) as no development is proposed. This Alternative would not result in impacts on the intersections and roadway segments surrounding the proposed Project. Furthermore, no change in circulation patterns would occur, as there would be no development to create the need for changes in circulation patterns. Overall, the "No Project/No Development" Alternative would result in less severe impacts to traffic and circulation compared to the proposed Project, since no traffic would be generated. The following discusses the forecast cumulative traffic under the "No Project/No Development" Alternative. The following is evaluated in greater detail in Section 5.4, TRAFFIC AND CIRCULATION.

Cumulative Without Project Conditions Intersection Operations

The following intersections are projected to operate unacceptably under Cumulative No Project conditions:

- Eureka Way (SR-299) / Buenaventura Boulevard - This signalized intersection is projected to operate at unacceptable LOS E in the AM peak hour under Cumulative No Project conditions.
- Eureka Way (SR-299) / Sunset Drive - This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria.
- Eureka Way (SR-299) / West Street - This Two-Way-Stop Controlled intersection is projected to operate at an unacceptable LOS F during the AM and PM peak-hour, and meets the signal warrant criteria under Cumulative No Project conditions.
- Eureka Way (SR-299) / Court Street - This signalized intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour.
- Court Street / 11th Street - This Two-Way-Stop Controlled intersection is projected to operate at unacceptable LOS F during the AM and PM peak-hour and meets the signal warrant criteria.
- Eureka Way (SR-299) / Market Street (SR-273) - This signalized intersection is projected to operate at unacceptable LOS E with Caltrans provided signal timings.
- Shasta Street / Court Street - This signalized intersection is projected to operate unacceptable LOS D during the AM and PM peak hour with Caltrans provided signal timings.
- Placer Street / Court Street - This signalized intersection is projected to operate at unacceptable LOS D during the AM peak hour under Cumulative No Project conditions.
- Placer Street / Airpark Drive / Fig Avenue - This signalized intersection is projected to operate at unacceptable LOS E in the AM peak hour and LOS D in the PM peak hour under Cumulative No Project conditions.
- Placer Street / Buenaventura Boulevard - This signalized intersection is projected to operate at unacceptable LOS E in the AM peak hour and LOS D in the PM peak hour under Cumulative No Project conditions.
- Buenaventura Boulevard / Lakeside Drive - This Two-Way-Stop-Controlled intersection is projected to operate at unacceptable LOS during the AM and PM peak-hour and meets the signal warrant criteria.



Noise

With no housing development occurring on-site, no new noise would be generated by construction, residential operations, or traffic generated by residents. Noise-sensitive land uses in the vicinity of the Project site would not experience any change in noise levels. Therefore, short-term and long-term noise impacts would be less when compared to that of the proposed Project.

Air Quality

Under this Alternative, short-term construction and long-term operational air emissions would not occur as no Project construction would take place, no Project operations would be established, and no Project-related traffic or stationary source emissions would be generated by new residents. Although the proposed Project as mitigated would not result in significant emissions of air quality pollutants, the air quality impacts associated with the "No Project/No Development" Alternative would be less than the proposed Project.

Biological Resources

Under the "No Project/No Development" Alternative the site would not be developed with a mix of residential uses, avoiding potential impacts to biological resources, including special-status species and sensitive habitats. In addition, implementation of the "No Project/No Development" Alternative would avoid the placement of fill materials within identified on-site jurisdictional waters, as no construction activities would occur. Direct impacts to biological resources that would result from the proposed Project would not occur under the "No Project/No Development" Alternative; therefore, impacts to biological resources would be less than the proposed Project.

Cultural Resources

Under the "No Project/No Development" Alternative, no impacts would occur with respect to existing and/or undiscovered cultural resources due to the construction of homes and supporting infrastructure. However, even in the undisturbed state, it is possible that some cultural resource sites may be altered over time due to weather conditions and will remain vulnerable to human disturbance or destruction. If these sites are not fully documented, information from these sites could be lost. The potential for direct impacts to cultural resources associated with the "No Project/No Development" Alternative is less than the proposed Project.

Public Services and Utilities

Under the "No Project/No Development" Alternative, there would not be an increased demand for community services including wet (water/sewer) and dry (electrical, gas, cable, telephone) utilities, fire protection and emergency medical services, law enforcement, schools, and other general governmental services. Because no development would occur, there would be no need for additional services to be provided.

Geologic Resources

Because no development would occur under this Alternative, soil disturbance associated with grading and building activities would not occur. No new buildings, roads, utilities, or other infrastructure would be constructed on the Project site, thus there would be no impacts associated with landslides, soil stability, or



slopes. Compared to the proposed Project, geology and soil impacts would be eliminated from under this Alternative.

Hydrology and Water Quality

The "No Project/No Development" Alternative would avoid potential short-term and long-term impacts to water quality associated with grading, excavation, and construction activities, as no site development would occur. Potential impacts to Salt Creek, Gold Run Creek, and other waters would be less than those impacts identified under the proposed Project.

ABILITY TO MEET PROJECT OBJECTIVES

Under the "No Project/No Development" Alternative, land use and housing projections would be inconsistent with the City of Redding *General Plan*, which has specifically allowed for development of the property. In addition, this Alternative does not meet the Project Objectives as described in Section 7.1, PROJECT OBJECTIVES. The "No Project/No Development" Alternative would deny the property owner's right to develop at this time; however, it would not preclude development at a future date. The "No Project/No Development" Alternative is considered environmentally superior to the proposed Project, as it would significantly reduce or eliminate environmental impacts in all categories when compared to the proposed Project.

7.3.2 "NO PROJECT/DEVELOPMENT IN ACCORDANCE WITH EXISTING GENERAL PLAN/ZONING DESIGNATIONS" ALTERNATIVE (INCREASED DENSITY)

DESCRIPTION OF ALTERNATIVE

Under the "No Project/Development in Accordance with Existing General Plan and Zoning Designations" Alternative, the Project site would be developed in densities allowed under the existing *General Plan* land use designation and zoning for the property. Implementation of this Alternative would consist of development on the approximate 272.9-acre site under the current land use designations of "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", and "Greenway" (GWY). The "No Project/Development in Accordance with Existing General Plan and Zoning Designations" Alternative would not include the rezone to apply the "PD" (Planned Development Overlay District) to the existing "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space) designations.

Under this Alternative, approximately 119 acres (of the total 272.9 acres) of the proposed Project are suitable for development (development in areas with a slope of 20 percent or less). Of the 119 acres, 25 acres are zoned "RS-2" (Residential Single Family) and 94 acres are zoned "RM-9" (Residential Multiple Family). Under the "RS-2" (Residential Single Family) zoning designation (2 dwelling units per acre), the base density would allow 50 units, and the maximum density would allow 87 units (3.5 dwelling units per acre). Based on development standards, a realistic maximum buildout for the "RS-2" (Residential Single Family) zoning designation would be 62 units (or 2.5 dwelling units per acre). Under the "RM-9" (Residential Multiple Family) zoning designation (9 dwelling units per acre), the maximum density would allow 846 units. The "RM" (Residential Multiple Family) zoning district allows large apartment buildings; therefore, 846 dwelling units would be allowed on the 94 acres. As such, the total possible unit yield within existing on-site zoning



classifications (with no neighborhood park dedication) would be 908 units (62 + 846 = 908). Assuming a neighborhood park dedication comparable to that identified for the proposed Project, a total residential unit yield under this Alternative would be 836 dwelling units. Approximately 153 (of 272.9) acres would remain as open space.

IMPACTS COMPARED TO PROJECT IMPACTS

An evaluation of the potential environmental impacts of the “No Project/Development in Accordance with Existing General Plan/Zoning Designations” Alternative, as compared to those of the proposed Project, is provided below.

Land Use and Relevant Planning

This Alternative would include the "PD" (Planned Development Overlay District) as it proposes to develop the Project site in accordance with the current land use and zoning designations. As such, this Alternative avoids flexibility in design established by the "PD" (Planned Development Overlay District) resulting in a less efficient use of land and subdivision design. Implementation of the “No Project/Development in Accordance with Existing General Plan/Zoning Designations” Alternative would result in 396 additional dwelling units compared to the proposed Project (836 units compared to the proposed Project’s 440 units); therefore, the development intensity and subsequent environmental impacts would be similar, if not greater, than those identified for the proposed Project. This increase in development would also be less compatible with adjacent residential densities.

Public Health and Safety

Implementation of the “No Project/Development in Accordance with Existing General Plan/Zoning Designations” Alternative would result in similar or greater public health and safety impacts as the proposed Project. This Alternative includes the disturbance of approximately 119 acres of the proposed Project site for development of 836 dwelling units, and would expose individuals to similar past mining-related effects as compared to the proposed Project. Additionally, since this Alternative would have more structures and persons living within the Project boundaries, wildland fire hazards are anticipated to be just as high, if not higher, than the proposed Project. Implementation of mitigation measures identified for the proposed Project would be applicable under this Alternative to ensure less than significant impacts would occur.

Aesthetics, Light and Glare

This Alternative would construct approximately 836 dwelling units rather than the Project’s proposed 440 dwelling units. Under this Alternative, the visual impacts to character/quality would increase as the proposed density at the Project site would increase compared to the proposed Project. The proposed building heights and massing, as viewed from residences to the north and east would increase. Therefore, compared to the proposed Project, impacts resulting from the degradation of character/quality would increase under this Alternative. View of the development from residents to the east would also be slightly increased due to the visible massing along the hilltops and ridgelines.

Under this Alternative, light and glare impacts would slightly increase, compared to the proposed Project, as the density of residential uses would be increased. The proposed neighborhood park uses would result in similar light and glare impacts. Overall, this Alternative would result in increased visual impacts due to the increase in density and visible building massing and heights.



Traffic and Circulation

Development of this Alternative would increase the number of residential units, thereby resulting in an increased population within the Project site and consequently more average daily vehicle trips (ADT) as compared to the proposed Project (5,432 total weekday trips compared to 4,424, resulting in 1,008 additional trips). Additionally, this Alternative would add to the cumulative impact on traffic within the area surrounding the Project site. These impacts would be greater than those of the proposed Project. Due to the increase in impacts, additional mitigation measures beyond those identified for the proposed Project would likely be required.

Noise

Due to the increased number of dwelling units and the subsequent increase in the number of vehicular trips associated with the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative, vehicular generated noise would be greater than the levels identified for the proposed Project. Construction-related noise would be similar to the level that would occur from development of the proposed Project, as the type of construction activities and equipment would be similar. The cumulative traffic noise levels would be higher when compared to the proposed Project, although the Project-related long-term noise levels are anticipated to be less than significant. Mitigation measures similar to the proposed Project would also be required.

Air Quality

The increased intensity of on-site development under this Alternative would result in a larger amount of particulate matter (PM₁₀) being released during construction activities, compared to the proposed Project. Additionally, the larger volume of Project-related traffic would result in increased air pollutant emissions associated with vehicle operations. According to a preliminary analysis using URBEMIS 2007 (Version 9.2.4), the development of 836 dwelling units would not result in long-term emissions above the SCAQMD thresholds; refer to Table 7-2, EXISTING GENERAL PLAN/ZONING ALTERNATIVE LONG-TERM OPERATIONAL AIR EMISSIONS. Emissions under this Alternative would be greater than the proposed Project since increase in the number of dwelling units would generate more vehicle trips.

**TABLE 7-2
Existing General Plan/Zoning Alternative Long-Term Operational Air Emissions**

Emissions Source	Pollutant (pounds/day)		
	ROG	NO _x	PM ₁₀
Area Source Emissions	48.65	7.35	0.01
Mobile Emissions	69.71	102.45	102.03
Total Emissions	118.36	109.80	102.04
SCAQMD Threshold	137	137	137
Is Threshold Exceeded? (Significant Impact)?	No	No	No

Notes:

1 - Based on URBEMIS 2007 Version 9.2.4 modeling results, worst case seasonal emissions for area and mobile emissions have been modeled.



Implementation of the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would likely not reduce greenhouse gas emissions to zero or to a near zero level. As such, implementation of this Alternative would likely result in greater greenhouse gas emissions when compared to the proposed Project.

Area source and mobile emissions associated with this Alternative would not exceed established SCAQMD thresholds even with the increase in vehicular trips. Mitigation measures similar to the proposed Project would be required. This Alternative is considered environmentally inferior to the proposed Project based on the slight increase of greenhouse gas emissions associated with the higher intensity development.

Biological Resources

The “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would result in the development of approximately 836 residential units on 119 acres, with approximately 153 acres of open space. Since the increased intensity of development within the Project site would occur within the generally the same development footprint, the impacts on biological resources would be comparable to those identified for the proposed Project. Mitigation measures similar to the proposed Project would be applied to reduce impacts to a less than significant level.

Cultural Resources

Since the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would occupy the same land as the proposed Project, the impacts would be expected to be the same. Additionally, mitigation measures for grading and construction activities would be required to reduce impacts to less than significant levels.

Public Services and Utilities

With implementation of this Alternative, the number of residential structures would be greater (836 dwelling units compared to 440); therefore, the amount of public services and utilities to adequately service the site would be greater. Infrastructure would still be required to be extended into the Project site to provide services and utilities to the residences. It is expected that the capacity of the infrastructure would be similar to, if not greater than, the capacity needed for the proposed Project.

Geologic Resources

Under this Alternative, the number of residential structures would be greater than the proposed Project; however, the site conditions within the development area would remain generally the same as the proposed Project. Therefore, impacts to geologic resources would be equivalent to those identified for the proposed Project, including seismic activity, soil erosion, and soil conditions. Any existing regulations and mitigation measures identified for the proposed Project would be applicable to this Alternative.

Hydrology and Water Quality

Implementation of the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would increase the amount of new impervious surfaces as would be required with the proposed Project. Potential hydrology and water quality impacts under this Alternative would be greater than those of the proposed Project, as 396 additional built structures would occupy the land. However,



implementation and compliance with the NPDES, SUSMP, and BMP requirements would reduce construction-related impacts on water quality to a less than significant level.

ABILITY TO MEET PROJECT OBJECTIVES

Although implementation of the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative would be consistent with the existing *General Plan* land use designations and zoning for the Project site, not all of the stated Project objectives (as described in Section 7.1) would be satisfied. This Alternative would not significantly reduce impacts associated with the proposed Project. It would, in fact, result in similar impacts or increase the level of impacts to all environmental categories discussed above. Therefore, the “No Project/Development in Accordance with Existing General Plan and Zoning Designations” Alternative is environmentally inferior to the proposed Project.

7.3.3 “SITE PLAN ALTERNATIVE 1”

DESCRIPTION OF ALTERNATIVE

Under “Site Plan Alternative 1”, development would occur based on the existing *General Plan* land use designations and zoning for the site. Land use designations would include the following two classifications: “Residential - 6 to 10 dwelling units per acre”, and “Residential, 2 to 3.5 units per acre”. The “Residential - 6 to 10 dwelling units per acre” land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The “Residential, 2 to 3.5 units per acre” land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. This analysis assumes that 242 lots would be developed under the “Residential, 2 to 3.5 units per acre” designation, and 322 lots would be developed under the “Residential - 6 to 10 dwelling units per acre” designation, therefore resulting in the development of 564 dwelling units. In addition, a 25-acre neighborhood park would be provided, and approximately 148 (of 272.9) acres would remain as open space.

Under this Alternative, grading activities would require approximately 840,000 cubic yards of cut and 920,000 cubic yards of fill, resulting in approximately 80,000 cubic yards of import material. Additionally, the total impact area would be approximately 124 acres; 0.97 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project’s direct impact of 0.257 acres). Refer to Figure 7-1a, SITE PLAN ALTERNATIVE 1, CUT-FILL DIAGRAM, Figure 7-1b, SITE PLAN ALTERNATIVE 1, IMPACTS TO WATERS OF THE U.S., and Figure 7-1c, SITE PLAN ALTERNATIVE 1, GRADING IMPACTS.

IMPACTS COMPARED TO PROJECT IMPACTS

An evaluation of the potential environmental impacts of “Site Plan Alternative 1”, as compared to those of the proposed Project, is provided below.

Land Use and Relevant Planning

Development under this Alternative would be in accordance with the current *General Plan* land use and zoning designations. Implementation of this Alternative would result in 124 additional dwelling units compared to the proposed Project (564 units compared to the proposed Project’s 440 units). In addition, this Alternative would have limited housing types (traditional lots and garden courts), and would not include the mix of housing types that the proposed Project would include (single-family, multiple-family, cluster homes



with garden courts, and custom home sites). The majority of the proposed neighborhood park under this Alternative is encumbered by power lines which is unacceptable to the City. Therefore, the development intensity and subsequent environmental impacts would be similar, if not greater, than those identified for the proposed Project. This increase in development would also be less compatible with adjacent residential densities.

Public Health and Safety

Implementation of "Site Plan Alternative 1" would result in similar public health and safety impacts as the proposed Project. This Alternative includes the disturbance of approximately 124 acres of the proposed Project site for development of 564 dwelling units, and would expose individuals to similar past mining-related hazards. Additionally, since this Alternative would have more structures and persons living within the Project boundaries, wildland fire hazards are anticipated to be just as high, if not higher, than the proposed Project. Implementation of mitigation measures identified for the proposed Project would be applicable under this Alternative to ensure less than significant impacts.

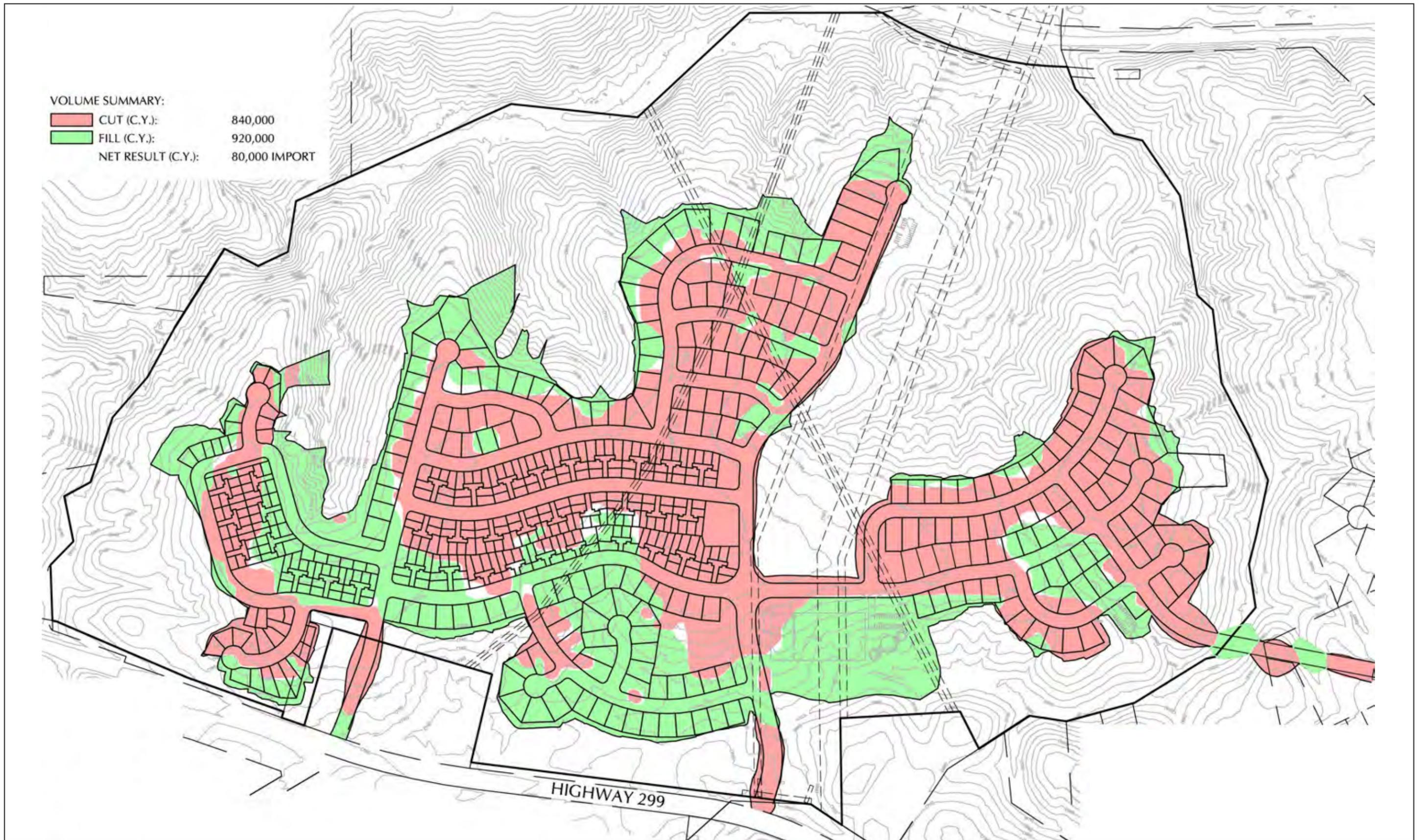
Aesthetics, Light and Glare

This Alternative would construct approximately 564 dwelling units rather than the Project's proposed 440 dwelling units. Under this Alternative, impacts to visual quality would increase as the proposed density at the Project site would increase compared to the proposed Project. The proposed building heights and massing, as viewed from residences to the north and east would increase.

Under this Alternative, light and glare impacts would slightly increase, compared to the proposed Project, as the density of residential uses would increase. Overall, this Alternative would result in increased visual impacts due to the increase in density and visible building massing and heights when compared to the proposed Project.

Traffic and Circulation

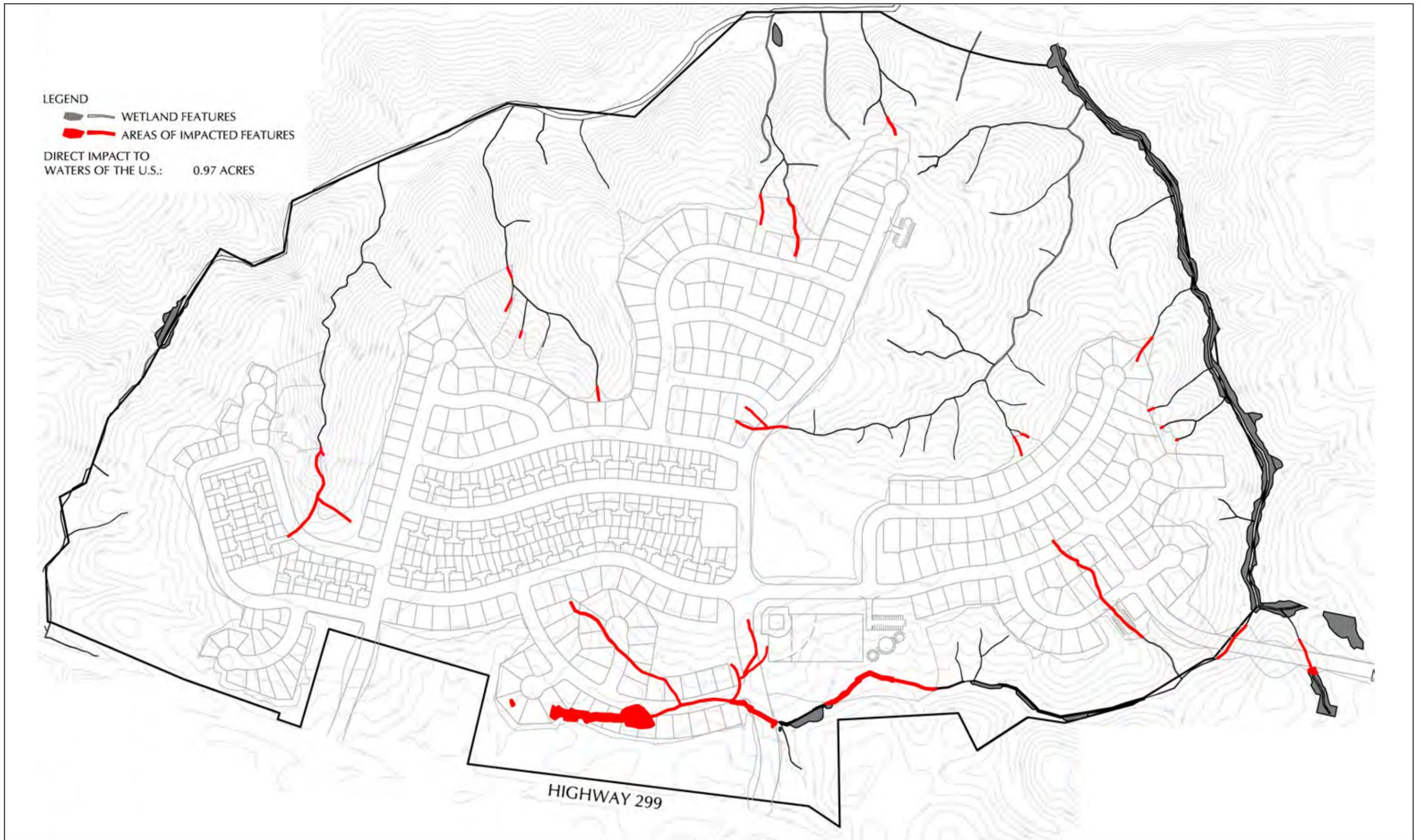
The greater number of residential structures developed under this Alternative would result in a larger number of people residing on the Project site, which in turn would result in an increase in ADT compared to the proposed Project (5,773 total weekday trips compared to 4,424, resulting in 1,349 additional trips). More AM and PM peak hour trips and ADT would result in greater impacts on intersections and roadway segments within the area surrounding the Project site. The temporary impacts on transportation within the area surrounding the Project site would be similar to those with the proposed Project because the proposed construction activities would be similar and short in duration. Because of the higher number of trips when compared to the proposed Project, this Alternative would result in a similar, if not greater impact on the intersections and roadway segments surrounding the Project site. In addition, this Alternative does not conform to the circulation component of the *General Plan* (it does not allow for the extension of Buenaventura Boulevard). Mitigation measures similar to or even greater than recommended for the proposed Project would be required. Overall, this Alternative would result in a greater impact on traffic and circulation compared to the proposed Project.



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

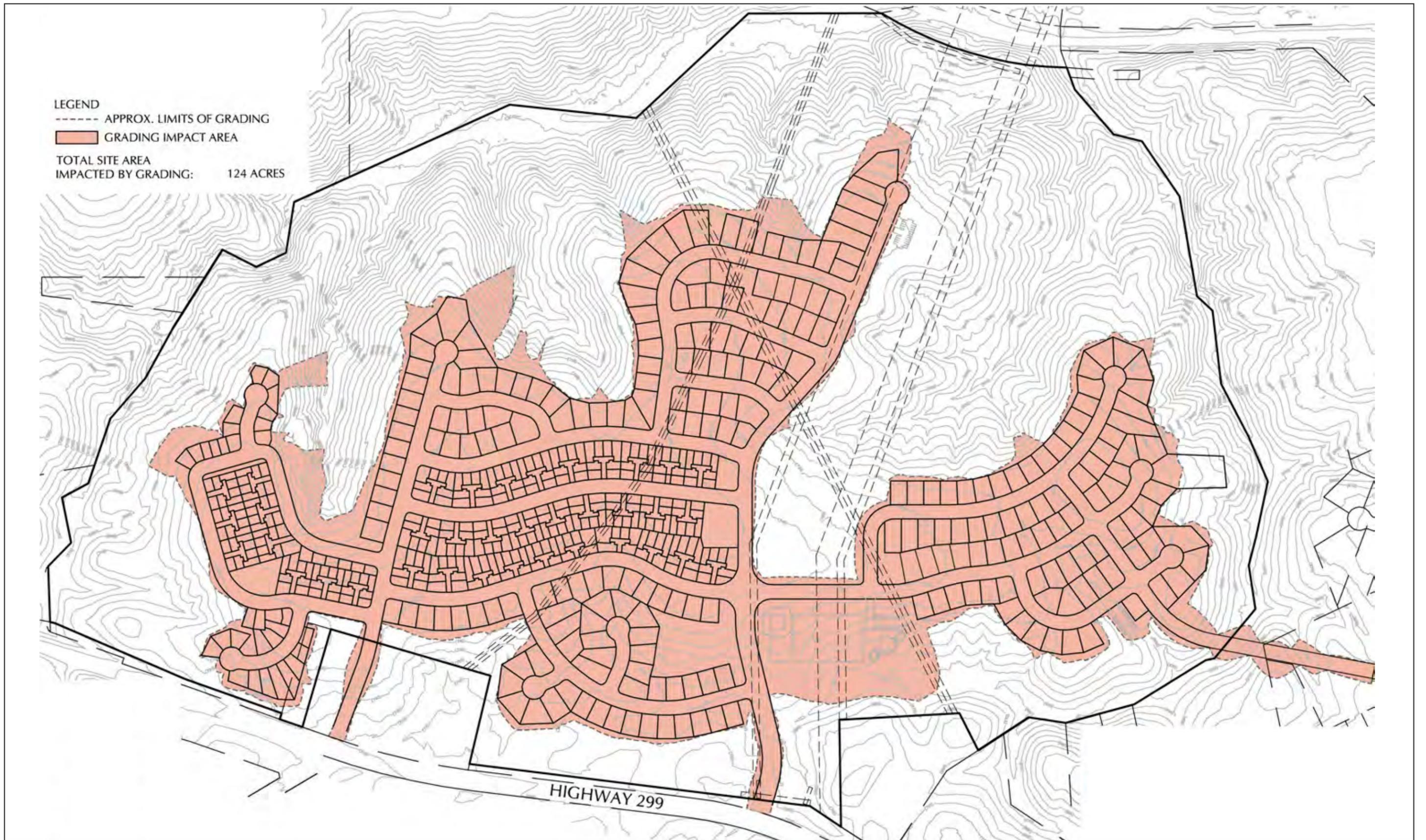
**Site Plan Alternative 1
 Cut-Fill Diagram**



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 1
Impacts to Waters of the U.S.



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 1
Grading Impacts

Figure 7-1c



Noise

Due to the increased number of dwelling units and the subsequent increase in the number of traffic trips associated with this Alternative, traffic noise impacts would be greater than those identified for the proposed Project. The noise that would result during construction would be similar to the level that would occur from development of the proposed Project, as the type of construction activities and equipment would be similar. As the number of vehicle trips associated with this Alternative would be larger in comparison to the proposed Project, the noise levels that would result from this Alternative would be greater than those identified for the proposed Project. Mitigation measures similar to the proposed Project would still be required.

Air Quality

The higher intensity of development proposed under this Alternative would result in a greater amount of particulate matter (PM₁₀) being released during construction activities, compared to the proposed Project. Additionally, the increase in Project-related traffic would result in increased air pollutant emissions. According to a preliminary analysis using URBEMIS 2007 (Version 9.2.4), the development of 564 dwelling units would not result in long-term emissions above SCAQMD thresholds; refer to Table 7-3, SITE PLAN ALTERNATIVE 1 LONG-TERM OPERATIONAL AIR EMISSIONS.

Implementation of “Site Plan Alternative 1” would likely not reduce greenhouse gas emissions to zero or to a near zero level. As such, implementation of this Alternative would likely result in greater greenhouse gas emissions when compared to the proposed Project.

Area source and mobile emissions associated with this Alternative would not exceed established SCAQMD thresholds even with the increase in vehicular trips. Mitigation measures similar to the proposed Project would be required. This Alternative is considered environmentally inferior to the proposed Project based on the slight increase of greenhouse gas emissions associated with the higher intensity development.

**TABLE 7-3
Site Plan Alternative 1 Long-Term Operational Air Emissions**

Emissions Source	Pollutant (pounds/day)		
	ROG	NO _x	PM ₁₀
Area Source Emissions	36.16	7.07	0.01
Mobile Emissions	54.59	80.25	79.94
Total Emissions	90.75	87.32	79.95
SCAQMD Threshold	137	137	137
Is Threshold Exceeded? (Significant Impact)?	No	No	No

Notes:

1 - Based on URBEMIS 2007 Version 9.2.4 modeling results, worst case seasonal emissions for area and mobile emissions have been modeled.



Biological Resources

Under this Alternative, the total area impacted by grading activities would be approximately 124 acres; 0.97 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project's direct impact of 0.257 acres). Because of the increased intensity of development within the Project site (564 units compared to the proposed Project's 440 units), the impacts on biological resources would be greater compared to the proposed Project. Mitigation measures similar to the proposed Project would be applied to reduce impacts to a less than significant level.

Cultural Resources

Under this Alternative, potential disturbances and impacts to cultural resources would be similar compared to those under the proposed Project. Mitigation measures similar to the proposed Project would be applied to reduce impacts to a less than significant level.

Public Services and Utilities

With implementation of this Alternative, the number of residential structures would be greater than the proposed Project; therefore, the amount of public services and utilities to adequately service the site would be greater. Infrastructure would still be required to be extended into the Project site to provide services and utilities to the residences. It is expected that the capacity of the infrastructure would be similar to, if not greater than, the capacity needed for the proposed Project.

Geologic Resources

The number of residential structures would be greater than the proposed Project (564 units compared to the proposed Project's 440). Under this Alternative, approximately 124 acres of land would be graded. Proposed project design would require approximately 840,000 cubic yards of cut and 920,000 cubic yards of fill, resulting in approximately 80,000 cubic yards of import material. This would equate to 80,000 cubic yards of dirt that would be brought on-site, compared to the proposed Project, which would have a net zero balance of cut and fill. Impacts to geologic resources would be greater than those identified for the proposed Project. Any existing regulations and mitigation measures identified for the proposed Project would be applicable to this Alternative.

Hydrology and Water Quality

Implementation of this Alternative would increase the amount of new impervious surfaces as would be required with the proposed Project. Potential hydrology and water quality impacts under this Alternative would be greater than the proposed Project, as 124 additional structures would occupy the land. However, implementation and compliance with the NPDES, SUSMP, and BMP requirements would reduce construction-related impacts on water quality to a less than significant level.

ABILITY TO MEET PROJECT OBJECTIVES

This Alternative would not reduce any impacts associated with the proposed Project. This Alternative would result in similar impacts in the categories of land use, public health and safety, cultural resources, public services and utilities, and would increase the level of impacts to aesthetics, air quality, biological resources, geologic resources, noise, traffic and circulation, and hydrology and water quality. Under this Alternative,



0.97 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). Additionally, 80,000 cubic yards of dirt would be brought on-site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. Therefore, "Site Plan Alternative 1" is inferior to the proposed Project and is thus rejected from further consideration.

7.3.4 "SITE PLAN ALTERNATIVE 2"

DESCRIPTION OF ALTERNATIVE

Under "Site Plan Alternative 2", development would occur the existing *General Plan* land use designations and zoning for the Project site. Land use designations would include the following two classifications: "Residential - 6 to 10 dwelling units per acre", and "Residential, 2 to 3.5 units per acre". The "Residential - 6 to 10 dwelling units per acre" land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The "Residential, 2 to 3.5 units per acre" land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. Under this Alternative, 519 detached single-family dwelling units (consisting of traditional lots and garden-courts) would be constructed on approximately 112 acres. No neighborhood park would be provided, and there would be limited housing types. Approximately 160 (of 272.9) acres would remain as open space.

Under this Alternative, proposed development would require 900,000 cubic yards of cut and 400,000 cubic yards of fill, resulting in approximately 500,000 cubic yards of export material. Additionally, the total area impacted by grading activities would be approximately 112 acres; 1.40 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project's direct impact of 0.257 acres). Refer to Figure 7-2a, SITE PLAN ALTERNATIVE 2, CUT-FILL DIAGRAM, Figure 7-2b, SITE PLAN ALTERNATIVE 2, IMPACTS TO WATERS OF THE U.S., and Figure 7-2c, SITE PLAN ALTERNATIVE 2, GRADING IMPACTS.

IMPACTS COMPARED TO PROJECT IMPACTS

An evaluation of the potential environmental impacts of "Site Plan Alternative 2", as compared to those of the proposed Project, is provided below.

Land Use and Relevant Planning

Development under this Alternative would be in accordance with the current *General Plan* land use and zoning designations. Implementation of this Alternative would result in 79 additional dwelling units compared to the proposed Project (519 units compared to the proposed Project's 440 units). In addition, this Alternative would have limited housing types (traditional lots and garden courts), and would not include the mix of housing types that the proposed Project would include (single-family, multiple-family, cluster homes with garden courts, and custom home sites). A neighborhood park would not be provided under this Alternative. Therefore, the development intensity and subsequent environmental impacts would be similar, if not greater, than those identified for the proposed Project.

Public Health and Safety

Implementation of "Site Plan Alternative 2" would result in similar public health and safety impacts as the proposed Project. This Alternative includes the disturbance of approximately 112 acres of the proposed



Project site for development of 519 detached, single-family dwelling units, and would expose individuals to similar past mining-related hazards as compared to the proposed Project. Additionally, since this Alternative would have more structures and persons living within the Project boundaries, wildland fire hazards are anticipated to be just as high, if not higher, than the proposed Project. Implementation of mitigation measures identified for the proposed Project would be applicable under this Alternative to ensure less than significant impacts.

Aesthetics, Light and Glare

This Alternative would construct approximately 519 detached, single-family dwelling units rather than the Project's proposed 440 dwelling units. Under this Alternative, visible grading activities, as viewed from residences to the north and east, would increase compared to the proposed Project. This Alternative would appear more intrusive, as seen from residents to the north and east. Therefore, visual impacts would increase under this Alternative due to the slightly increased grading impacts and increased density. Impacts to residents to the east would also be greater due to the slightly increased building massing and heights along the visible hilltop. Under this Alternative, residential light and glare impacts would slightly increase, compared to the proposed Project, as the density of proposed residential uses would increase; however, potential light and glare impacts associated with the proposed neighborhood park would be eliminated. Overall, this Alternative would result in increased impacts relative to visual character/quality, as a result of the increase in density and visible building massing and heights as viewed from off-site residences to the north and east.

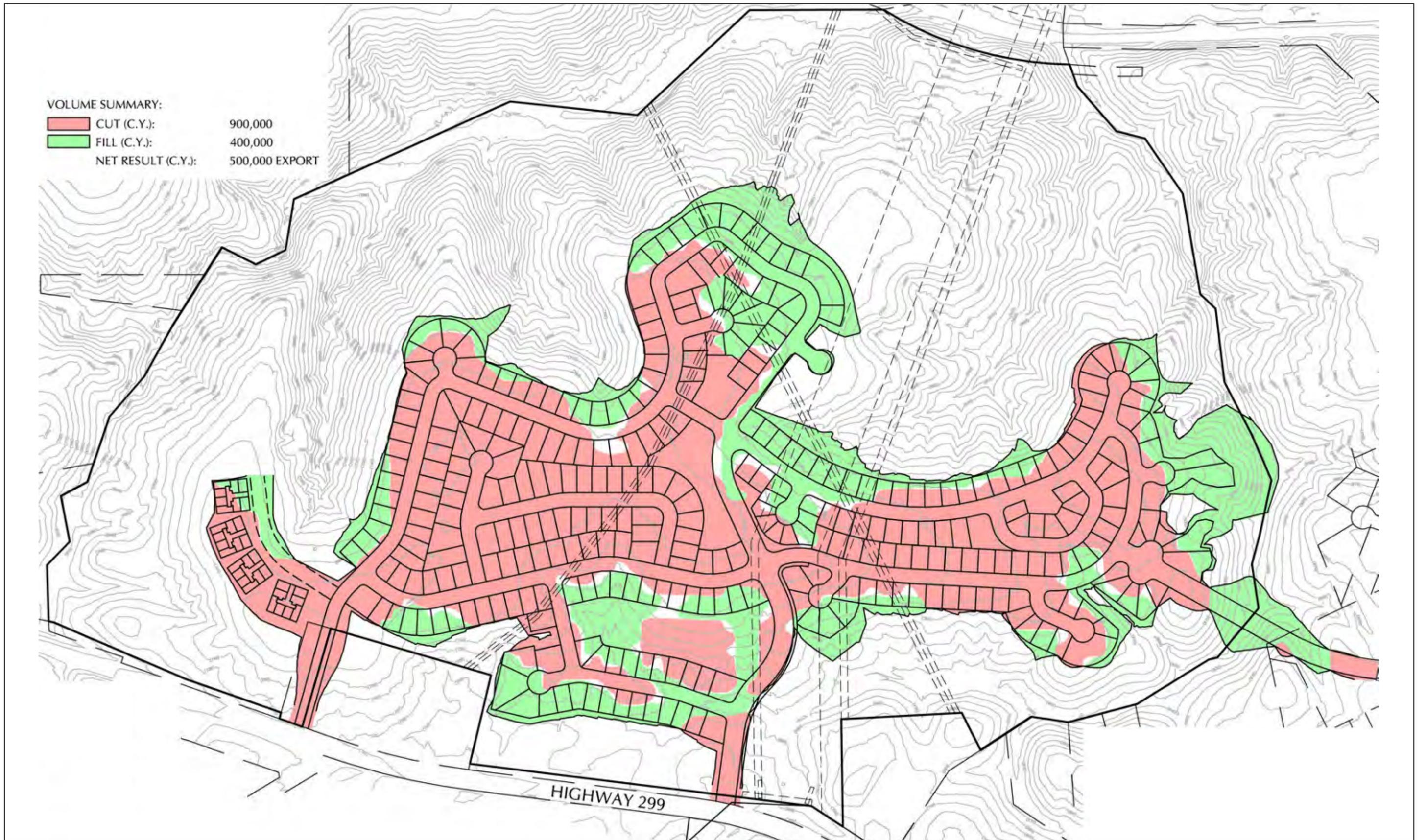
Traffic and Circulation

The greater number of residential structures developed under this Alternative would result in a larger number of people residing on the Project site, which in turn would result in an increase in ADT compared to the proposed Project (4,737 total weekday trips compared to 4,424, resulting in 313 additional trips).

Additional AM and PM peak hour trips and ADT would result in slightly greater impacts on intersections and roadway segments within the area surrounding the Project site. The temporary impacts on transportation surrounding the site would be similar to those with the proposed Project as construction activities would be similar and short in duration. Because of the higher number of trips when compared to the proposed Project, this Alternative would result in a similar, if not greater impact on the intersections and roadway segments surrounding the Project site. In addition, this Alternative does not conform to the circulation component of the *General Plan* (it does not allow for the extension of Buenaventura Boulevard). Similar to the proposed Project, because this Alternative would increase traffic volumes, causing several intersections to operate at unacceptable LOS, mitigation measures similar to or greater than recommended for the proposed Project would be required. Overall, this Alternative would result in a greater impact on traffic and circulation compared to the proposed Project.

Noise

Due to the increased number of dwelling units and the subsequent increase in the number of traffic trips associated with "Site Plan Alternative 2", traffic noise impacts would be greater than those identified under the proposed Project. The noise that would result during construction would be similar to the level that would occur from development of the proposed Project, as the type of construction activities and equipment would be similar.

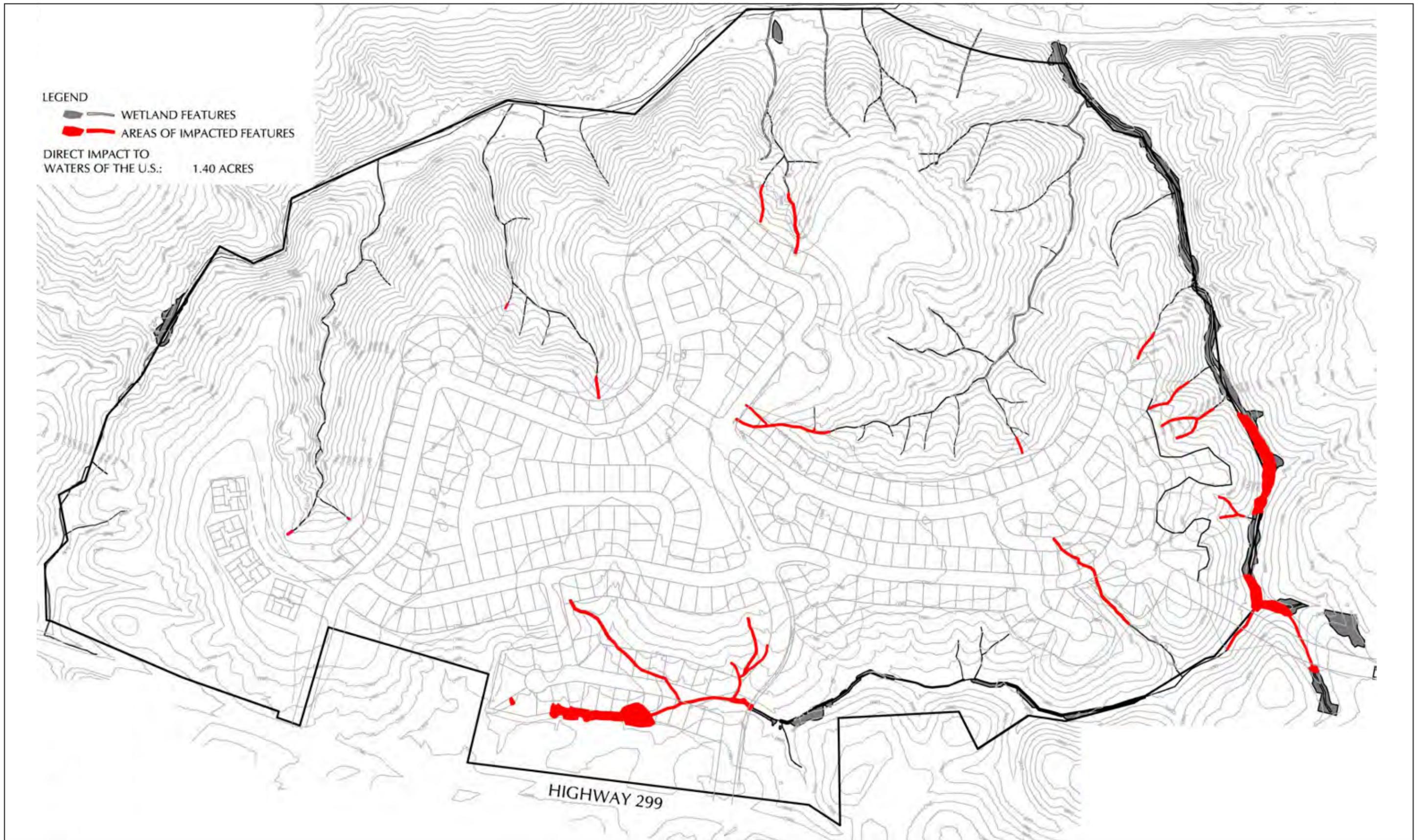


Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

**Site Plan Alternative 2
Cut-Fill Diagram**

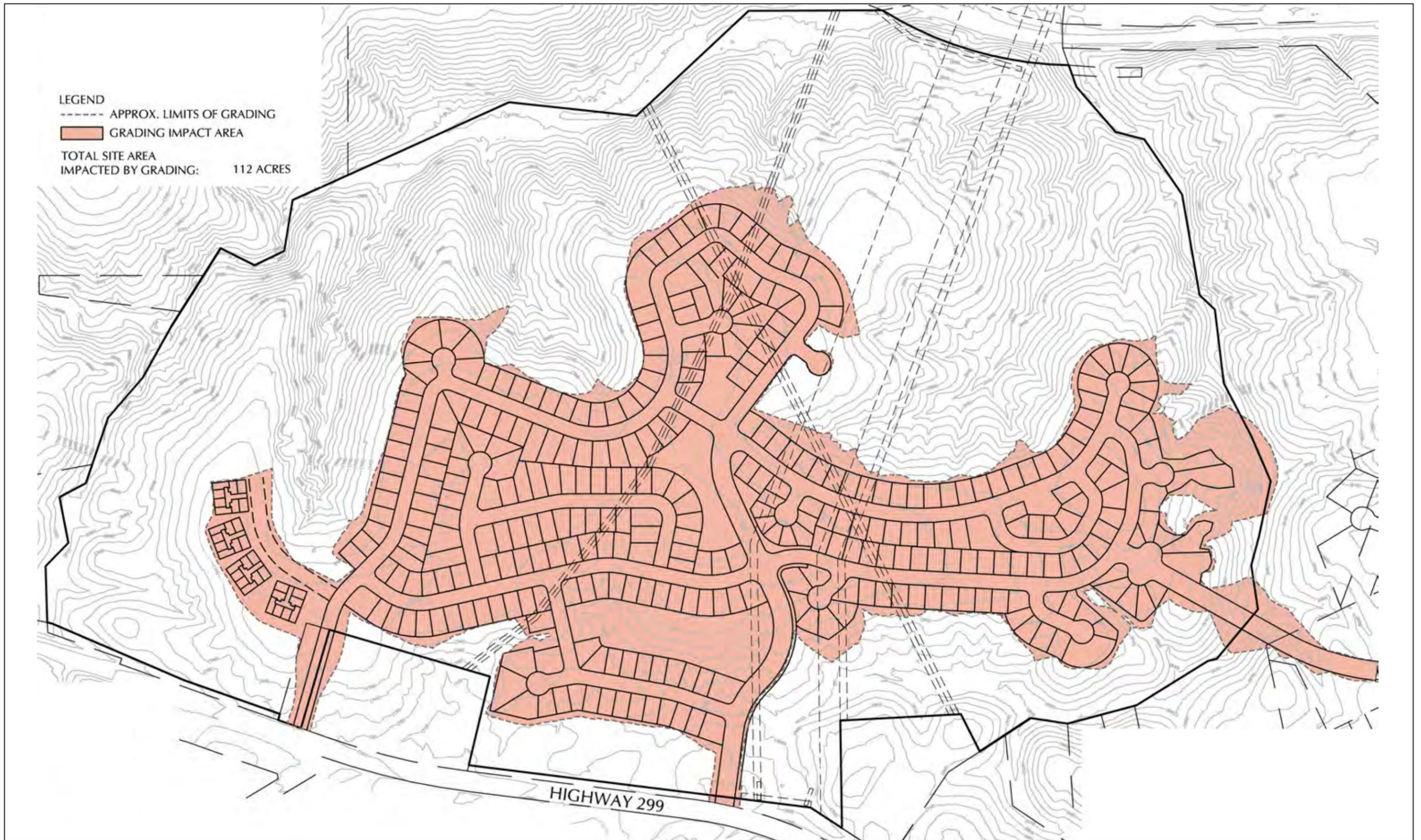
Figure 7-2a



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 2
Impacts to Waters of the U.S.



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 2
Grading Impacts

Figure 7-2c



As the number of vehicle trips associated with this Alternative would be greater in comparison to the proposed Project, the noise levels that would result from the Alternative would be higher than those identified for the proposed Project. Similar to the proposed Project, long-term and cumulative noise levels are anticipated to be less than significant. Mitigation measures similar to the proposed Project would be required.

Air Quality

This higher intensity of development proposed under this Alternative would result in a greater amount of particulate matter (PM₁₀) being released during construction activities, compared to the proposed Project. Additionally, the increase in Project-related traffic would result in increased air pollutant emissions associated with traffic. According to a preliminary analysis using URBEMIS 2007 (Version 9.2.4), the development of 519 dwelling units would not result in long-term emissions above SCAQMD thresholds; refer to Table 7-4, SITE PLAN ALTERNATIVE 2 LONG-TERM OPERATIONAL AIR EMISSIONS.

**TABLE 7-4
Site Plan Alternative 2 Long-Term Operational Air Emissions**

Emissions Source	Pollutant (pounds/day)		
	ROG	NO _x	PM ₁₀
Area Source Emissions	33.27	6.50	0.01
Mobile Emissions	49.91	73.38	73.10
Total Emissions	83.18	79.88	73.11
SCAQMD Threshold	137	137	137
Is Threshold Exceeded? (Significant Impact)?	No	No	No

Notes:

1 - Based on URBEMIS 2007 Version 9.2.4 modeling results, worst case seasonal emissions for area and mobile emissions have been modeled.

Implementation of “Site Plan Alternative 2” would not likely reduce greenhouse gas emissions to zero or to a near zero level. As such, implementation of this Alternative would likely result in greater greenhouse gas emissions when compared to the proposed Project.

Area source and mobile emissions associated with this Alternative would not exceed established SCAQMD thresholds even with the increase in vehicular trips. Mitigation measures similar to the proposed Project would be required. This Alternative is considered environmentally inferior to the proposed Project based on the slight increase of greenhouse gas emissions associated with the higher intensity development.

Biological Resources

Under this Alternative, the total area impacted by grading activities would be approximately 112 acres; 1.40 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project’s direct impact of 0.257 acres). Because of the increased intensity of development within the Project site (519 units compared to the proposed Project’s 440 units), the impacts on biological resources would be slightly greater compared to the proposed Project. Mitigation measures similar to the proposed Project would be applied to reduce impacts to a less than significant level.



Cultural Resources

Under this Alternative, potential disturbances and impacts to cultural resources would be similar compared to those under the proposed Project. Mitigation measures similar to the proposed Project would be applied to reduce impacts to a less than significant level.

Public Services and Utilities

With implementation of this Alternative, the number of residential structures would be greater than the proposed Project; therefore, the amount of public services and utilities to adequately service the site would be greater. Infrastructure would still be required to be extended into the Project site to provide services and utilities to the residences. It is expected that the capacity of the infrastructure would be similar to, if not greater than, the capacity needed for the proposed Project.

Geologic Resources

The number of residential structures would be greater than the proposed Project (519 units compared to the proposed Project's 440). Under this Alternative, proposed development would require 900,000 cubic yards of cut and 400,000 cubic yards of fill, resulting in approximately 500,000 cubic yards of export material. This would equate to 500,000 cubic yards of dirt that would be removed from the site, compared to the proposed Project, which would have a net zero balance of cut and fill. Impacts to geologic resources would be greater than those identified for the proposed Project. Any existing regulations and mitigation measures identified for the proposed Project would be applicable to this Alternative.

Hydrology and Water Quality

Implementation of this Alternative would increase the amount of new impervious surfaces as would be required with the proposed Project. Potential hydrology and water quality impacts under this Alternative would be greater than the proposed Project, as 79 additional structures would occupy the land. However, implementation and compliance with the NPDES, SUSMP, and BMP requirements would reduce construction-related impacts on water quality to a less than significant level.

ABILITY TO MEET PROJECT OBJECTIVES

This Alternative would result in similar impacts or increase the level of impacts to all environmental categories discussed above. This Alternative would result in similar impacts in the categories of land use, public health and safety, cultural resources, and public services and utilities, and would increase the level of impacts to aesthetics, hydrology and water quality, geologic resources, traffic, noise, air quality, and biological resources. Under this Alternative, 1.40 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). Additionally, 500,000 cubic yards of dirt would be removed from the site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. Therefore, "Site Plan Alternative 2" is considered inferior to the proposed Project and is thus rejected from further consideration.



7.3.5 "SITE PLAN ALTERNATIVE 3" (REDUCED DENSITY)

DESCRIPTION OF ALTERNATIVE

Under "Site Plan Alternative 3", development would occur under the existing *General Plan* land use designations and zoning for the Project site. Land use designations would include the following two classifications: "Residential - 6 to 10 dwelling units per acre", and "Residential, 2 to 3.5 units per acre". The "Residential - 6 to 10 dwelling units per acre" land use designation allows for the development of single-family detached units, attached single-family patio homes, and/or townhomes. The "Residential, 2 to 3.5 units per acre" land use designation allows for the development of subdivision with lots generally not smaller than 8,000 square feet. This analysis assumes that 347 detached single-family units would be constructed. No neighborhood park would be provided. Approximately 159 (of 272.9) acres would remain as open space.

Under this Alternative, grading activities would require 918,000 cubic yards of cut and 806,000 cubic yards of fill, resulting in approximately 112,000 cubic yards of export material. Additionally, the total area impacted by grading would be approximately 113 acres; 0.83 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project's direct impact of 0.257 acres). Refer to Figure 7-3a, SITE PLAN ALTERNATIVE 3, CUT-FILL DIAGRAM, Figure 7-3b, SITE PLAN ALTERNATIVE 3, IMPACTS TO WATERS OF THE U.S., and Figure 7-3c, SITE PLAN ALTERNATIVE 3, GRADING IMPACTS.

IMPACTS COMPARED TO PROJECT IMPACTS

An evaluation of the potential environmental impacts of "Site Plan Alternative 3", as compared to those of the proposed Project, is provided below.

Land Use and Relevant Planning

The number of homes and potential population would be reduced under this Alternative (347 detached single-family units in comparison to 248 SFR units, 96 clustered SFR units, and 96 apartment units). Although no significant land use impacts would occur with the proposed Project, implementation of this Alternative would not conform to *General Plan* or zoning designations, as there would be no multi-family component on-site. The number of dwelling units proposed is lower than the 440 units that would be allowed under the proposed Project, and consequently, land use impacts would be proportionally reduced under this Alternative. Additionally, "Site Plan Alternative 3" does not fulfill all the stated Project objectives.

Public Health and Safety

This Alternative includes the disturbance of approximately 113 acres; a net decrease of one acre compared to the proposed Project. Implementation of "Site Plan Alternative 3" would result in similar potentially significant public health and safety impacts as the proposed Project. The development of 347 single-family residential units on-site has the potential expose individuals to similar past mining-related hazards as compared to the proposed Project. However, since this Alternative would have fewer structures and fewer persons living within the Project boundaries, wildland fire hazards are anticipated to be less than the proposed Project. Implementation of mitigation measures identified for the proposed Project would be applicable under this Alternative to ensure less than significant public health and safety impacts.



Aesthetics, Light and Glare

This Alternative would construct approximately 347 detached, single-family dwelling units rather than the Project's proposed 440 dwelling units. The visible structural massing along the northern portion of the site would appear to increase due to the construction of residential development (2 to 3.5 units per acre), compared to the Project's proposed custom home lots, which provide topographic relief along the edge of development. This Alternative would appear more intrusive on the visible hilltop, as seen from residents to the north and would appear similar to the Project, as seen from residences to the east.

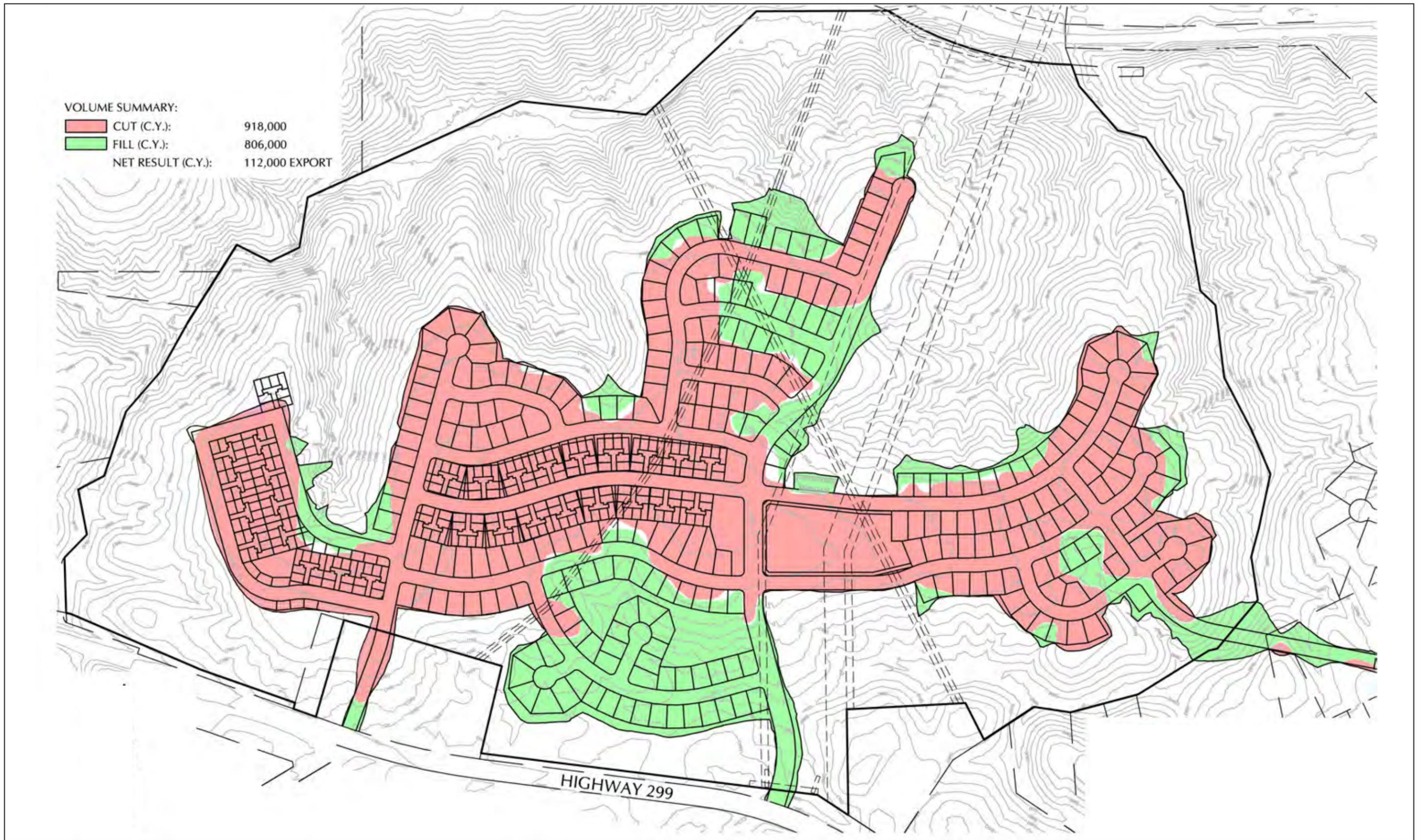
Impacts to residents to the west would remain similar to the proposed Project. Visual impacts to scenic vistas would be increased to significant and unavoidable levels, compared to the proposed Project, as a result of the increased visual impacts to a designated "prominent ridgetop" (located above grade and to the north of the Project site). Under this Alternative, light and glare impacts would slightly decrease, as the proposed density would decrease and the proposed neighborhood park would be eliminated. Overall, this Alternative would result in increased impacts to scenic vistas and degradation of character/quality, as a result of the increase in density and visible building massing and heights as viewed from off-site residences to the north.

Traffic and Circulation

The fewer residential structures developed under this Alternative would result in fewer people residing on the Project site, which in turn would result in fewer ADT than the proposed Project (3,167 total weekday trips compared to 4,424, resulting in 1,257 fewer trips). As a result, this Alternative would generate fewer vehicle trips and would have fewer traffic-related impacts than the proposed Project. However, this Alternative does not conform to the circulation component of the *General Plan* (it does not allow for the extension of Buenaventura Boulevard) and the western-most entry does not align with Lower Springs Road. Many of the planned improvements and recommended mitigation measures identified for the Project would still be applicable under this Alternative in order to reduce impacts to a less than significant level. Under this Alternative, the temporary impacts on transportation within the area would be similar to those of the Project as construction activities would be similar. Although this Alternative would have fewer total weekday trips compared to the proposed Project (3,167 compared to 4,424), mitigation measures identified for the proposed Project would be applicable to this Alternative.

Noise

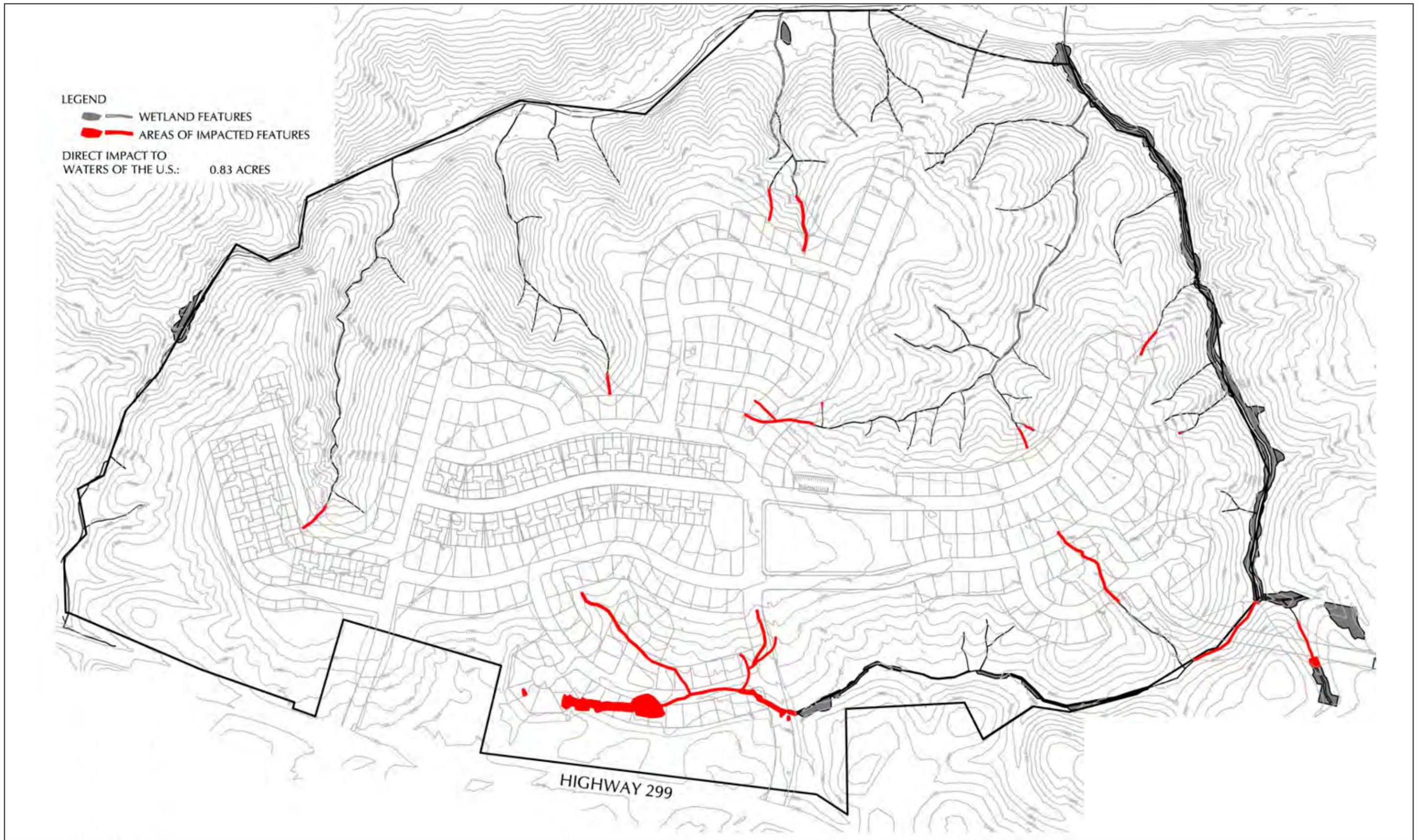
Compared to the proposed Project, the site preparation associated with "Site Plan Alternative 3" would be similar, although slightly reduced due to the elimination of 93 dwelling units. Additionally, the construction schedule would likely be reduced. Implementation of this Alternative would result in increased noise levels from on-site operations and vehicular traffic when compared to the existing uses. However, this Alternative would result in less traffic compared to the proposed Project; therefore, anticipated traffic noise levels would be proportionately reduced. Similar to the proposed Project, the Project-related long-term and cumulative noise levels are anticipated to be less than significant. Mitigation measures identified for the proposed Project would be applicable to this Alternative.



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

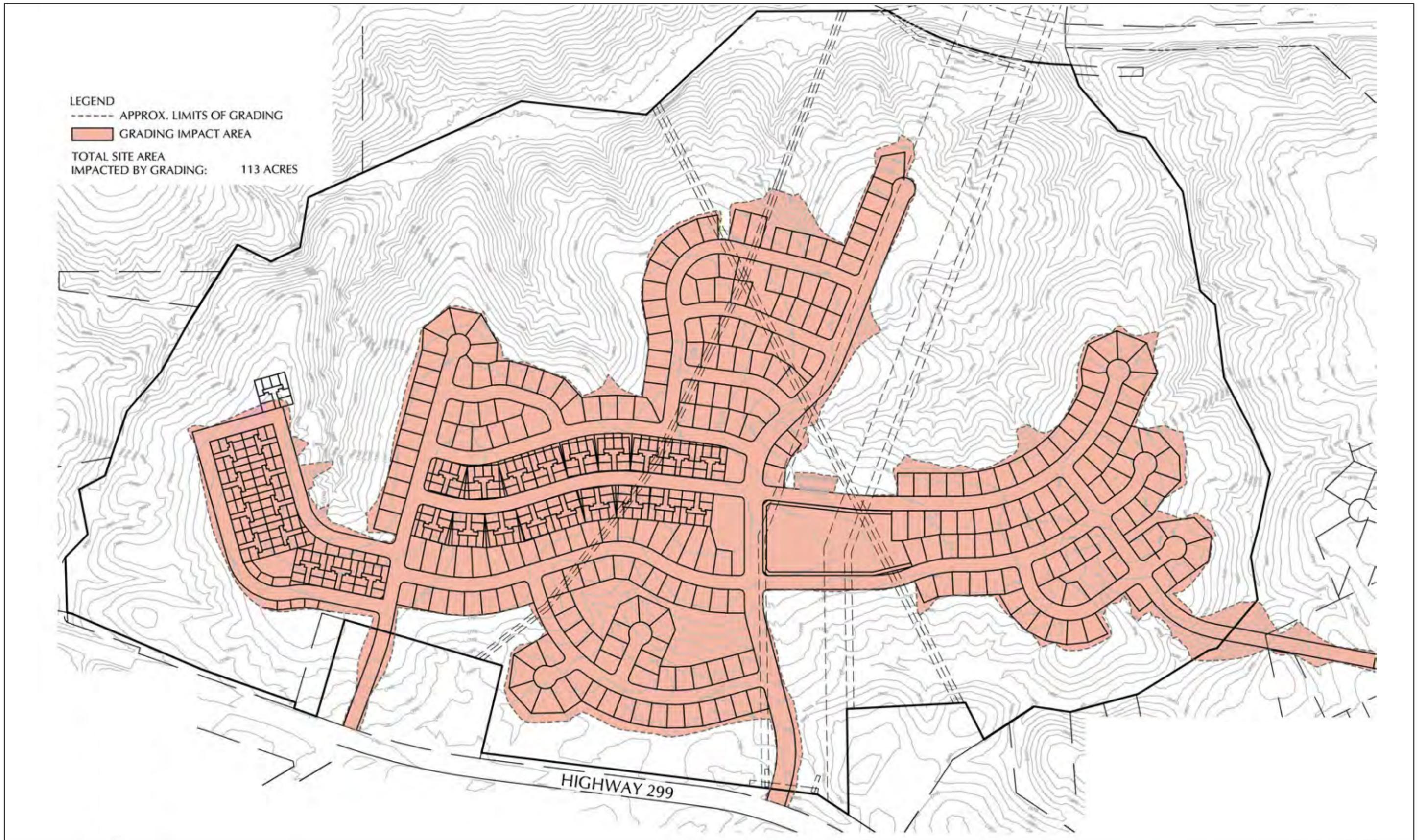
**Site Plan Alternative 3
 Cut-Fill Diagram**



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 3
Impacts to Waters of the U.S.



Source: Sharrah Dunlap Sawyer, Inc., October 2008.

SALT CREEK HEIGHTS TENTATIVE SUBDIVISION MAP (S-15-07),
 REZONE APPLICATION (RZ-6-07), AND PLANNED DEVELOPMENT PLAN (PD-11-07) • EIR

Site Plan Alternative 3
Grading Impacts



Air Quality

This Alternative would construct fewer residential units and have fewer vehicle trips, compared to the proposed Project. As a result, this Alternative would result in reduced particulate matter (PM₁₀) and long-term operational air pollutant emissions, compared to the Project. Additionally, the reduced volume of Project-related traffic would result in reduced air pollutant emissions associated with traffic. According to a preliminary analysis using URBEMIS 2007 (Version 9.2.4), the development of 347 dwelling units would not result in long-term emissions above SCAQMD thresholds; refer to Table 7-5, ALTERNATIVE 2 LONG-TERM OPERATIONAL AIR EMISSIONS. Emissions under this alternative would be less than the proposed Project because fewer dwelling units would generate less vehicle trips.

Greenhouse gas emissions under this Alternative would be slightly less than the proposed Project; however as discussed in Section 5.7, AIR QUALITY, the proposed Project would reduce green house gas emissions to zero or near zero level, as required by the SCAQMD. Mitigation measures similar to the proposed Project would be required. Air quality impacts for this Alternative would be similar as those of the proposed Project and with the implementation of mitigation measures SCAQMD thresholds would not be exceeded. Therefore, "Site Plan Alternative 3" would be considered neither environmentally superior nor inferior to the proposed Project in this regard.

TABLE 7-5
Site Plan Alternative 3 (Reduced Density) Long-Term Operational Air Emissions

Emissions Source	Pollutant (pounds/day)		
	ROG	NO _x	PM ₁₀
Area Source Emissions	22.26	4.35	0.05
Mobile Emissions	33.37	49.06	48.87
Total Emissions	55.63	53.14	48.92
SCAQMD Threshold	137	137	137
Is Threshold Exceeded? (Significant Impact)?	No	No	No

Notes:

1 - Based on URBEMIS 2007 Version 9.2.4 modeling results, worst case seasonal emissions for area and mobile emissions have been modeled.

Biological Resources

Under this Alternative, the total area impacted by grading activities would be approximately 113 acres; 0.83 acres of which would be a direct impact to waters of the U.S. (compared to the proposed Project's direct impact of 0.257 acres). Mitigation measures similar to those recommended for the proposed Project would be required to reduce potential impacts to biological resources.

Cultural Resources

Potential disturbances to cultural resources under this Alternative would be decreased compared to those under the proposed Project. Fewer land disruptions because of a reduced construction area would decrease the likelihood of disturbing undiscovered cultural resources. In addition, mitigation measures required for



grading and construction activities for the proposed Project would apply to the same activities for this Alternative, and would therefore result in less than significant impacts on undiscovered cultural resources. With regard to cultural resources, this Alternative would be neither environmentally superior nor environmentally inferior to the proposed Project.

Public Services and Utilities

The demand for public services and utilities generated at the Project site would be reduced. The reduced number of dwelling units would result in fewer people residing within the Project site, which would in turn have lesser impacts on fire and police services, the potential impacts from wildland fires would be reduced due to the reduction in number of structures, fewer students added to school facilities, and less demand on utilities (water, sewer, solid waste disposal, electricity, natural gas, etc.). This Alternative would require relatively similar infrastructure improvements. All standard mitigation measures identified under the Project would be required in order to reduce impacts to a less than significant level.

Geologic Resources

Under this Alternative, 93 fewer dwelling units would be developed compared to the proposed Project (347 units compared to the proposed Project's 440). However, proposed development would require 918,000 cubic yards of cut and 806,000 cubic yards of fill, resulting in approximately 112,000 cubic yards of export material. This would equate to 112,000 cubic yards of dirt that would be removed from the site, compared to the proposed Project, which would have a net zero balance of cut and fill. The same existing regulations and mitigation measures identified for the proposed Project would be applicable to this Alternative.

Hydrology and Water Quality

Impacts under this Alternative would be reduced compared to those under the proposed Project. With a reduction in the overall number of lots and a decrease in impervious surfaces, the total amount of surface runoff would be reduced. Less natural vegetation and topsoil would be removed resulting in more permeable surfaces for water absorption and infiltration. As with the proposed Project, this Alternative would comply with standard City provisions related to the incorporation of sufficient storm drain infrastructure to reduce the amount of surface runoff. Implementation and compliance with the NPDES, SUSMP, and standard BMP requirements would reduce construction-related impacts on water quality to a less than significant level. Mitigation measures similar to the proposed Project would be applied to ensure short-term water quality construction impacts remain less than significant.

ABILITY TO MEET PROJECT OBJECTIVES

The intent of this Alternative is to avoid or substantially reduce significant impacts associated with the proposed Project. With the construction of fewer homes on the property, impacts associated with land use, traffic, noise, air quality, cultural resources, public services and utilities, and hydrology and water quality would be reduced; however, mitigation measures similar to the proposed Project would be required. Under this Alternative, 0.83 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project's direct impact of 0.257 acres). In addition, 112,000 cubic yards of dirt would be removed from the site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. Impacts in the category of public health and safety would result in similar impacts when compared with the proposed Project. Impacts to aesthetics, biological resources, and geologic resources would be equal to or slightly worse than those of the proposed Project. This Alternative would only



partially satisfy the proposed Project objectives, as there is only one housing type (not a mixture of housing types and densities) and no neighborhood park would be provided.

7.4 “ENVIRONMENTALLY SUPERIOR” ALTERNATIVE

The purpose of the Alternatives evaluation is to develop project alternatives that have fewer or no significant impacts compared to the proposed Project. State *CEQA Guidelines* §15126(d)(2) indicates that, if the “No Project/No Development” Alternative is the “Environmentally Superior” Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other Alternatives. In this case, the “No Project/No Development” Alternative (Existing Conditions) is the Environmentally Superior Alternative, as it would not result in environmental impacts associated with construction. Table 7-6, COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT, provides a comparison matrix of the relative impacts of each alternative to the proposed Project.

**TABLE 7-6
Comparison of Alternatives to the Proposed Project**

ISSUE	ALTERNATIVE				
	No Project/ No Development	Existing General Plan and Zoning (Increased Density)	Site Plan Alternative 1	Site Plan Alternative 2	Site Plan Alternative 3 (Reduced Density)
5.1 Land Use & Relevant Planning	+	=-	=-	=-	=-
5.2 Public Health & Safety	-	=-	=-	=-	=
5.3 Aesthetics, Light and Glare	+	-	-	-	=-
5.4 Traffic & Circulation	+	-	-	-	=/+
5.5 Noise	+	-	-	-	=/+
5.6 Air Quality	+	-	-	-	=/+
5.7 Biological Resources	+	=	-	-	-
5.8 Cultural Resources	+	=	=	=	=
5.9 Public Services & Utilities	+	=-	=-	=-	=/+
5.10 Geologic Resources	+	=	=-	=-	-
5.11 Hydrology & Water Quality	+	-	=-	=-	=/+

+ : Impacts better/less than those of the proposed Project.
 = : Impacts same as those of the proposed Project.
 - : Impacts worse than those of the proposed Project.
 =/+ : Impacts equal to or slightly improved than those of the proposed Project.
 =/- : Impacts equal to or slightly worse than those of the proposed Project.

For this analysis, after the “No Project/No Development” Alternative, the “Site Plan Alternative 3” (Reduced Density) is considered the Environmentally Superior Alternative, as it would result in the majority of lesser or equivalent environmental impacts when compared to the proposed Project. As described above, impacts associated with land use, traffic, noise, air quality, cultural resources, public services and utilities, and hydrology and water quality would be reduced; however, mitigation measures similar to the proposed Project would be required. Under this “Site Plan Alternative 3”, 0.83 acres of waters of the U.S. would be impacted during grading activities (compared to the proposed Project’s direct impact of 0.257 acres). In addition, 112,000 cubic yards of dirt would be removed from the site during construction, compared to the proposed Project, which would have a net zero balance of cut and fill. This Alternative would only partially satisfy



the proposed Project objectives, as there is only one housing type (not a mixture of housing types and densities) and no neighborhood park would be provided. Therefore, "Site Plan Alternative 3" has been rejected as the Environmentally Superior Alternative due to increased impacts in the areas of biological resources, geology and soils, and inconsistencies with the *General Plan* and zoning designations for the site. Further, "Site Plan Alternative 3" fails to meet the objectives of the Project. Based on the reasons stated above, the proposed Project is considered the Environmentally Superior Alternative because no other Project alternative both feasibly achieves the objectives of the Project and avoids or reduces the potentially significant impacts of the proposed Project.



SECTION 8.0: Inventory of Mitigation Measures



8.0 INVENTORY OF MITIGATION MEASURES

8.1 LAND USE AND RELEVANT PLANNING

Short-Term Impacts (Construction)

MM 5.1-1: Implement short-term construction mitigation measures outlined in Section 5.3, AESTHETICS, LIGHT AND GLARE, and Section 5.6, AIR QUALITY.

Consistency with General Plan

MM 5.1-2: Grading within on-site slope areas that exceed 20 percent should be avoided in accordance with *General Plan* Policy CDD3A unless otherwise approved through Planning Commission Interpretation Policy 2001-3. The Final Subdivision Map shall be revised to redesign or eliminate those parcels that fail to meet the objectives of *General Plan* Policy CDD3A as determined by the approving body for the proposed Project.

8.2 PUBLIC HEALTH AND SAFETY

Wildland Fire Threat

MM 5.2-3a: A Vegetation Management/Fire Fuel Reduction Plan (Plan) shall be submitted for approval by the Fire Marshal and Development Services Department in conjunction with Project improvement plans. The objectives of the Plan shall be to reduce fire-fuel loads to establish a adequate fire-safety buffer between proposed residences and adjacent wildlands subject to the following criteria:

1. Two primary fuel-reduction areas shall be established as follows:

ZONE 1: This zone shall include the area on-site within 100 feet of a building site that abuts natural open space. Within Zone 1, 80 to 90 percent of the existing brush (manzanita, ceanothus, etc.) shall be removed. Trees shall be saved except where approved to support development otherwise. Trees shall be limbed up to 8 feet.

ZONE 2: This zone shall include a 100-foot-wide band parallel and immediately adjacent to the Zone 1 clearance area where located on-site. Within Zone 2, vegetation shall be reduced so that 50 percent of brush is cleared and trees are limbed up to 8 feet. Where crown closure of existing vegetation is already 50 percent or less, only ground level fuels will be reduced.

All fuel-reduction zones shall be measured on a horizontal plane.

The depths of Zone 1 and/or Zone 2 may be modified by the Fire Marshal upon approval of a project-specific fire-behavior study demonstrating that a substantially similar level of protection may be provided through a combination of fuel-reduction zones and other means of mitigation.



2. Heavy motorized equipment which could promote erosions shall not be used to reduce vegetation in areas with slope that are steeper than 20 percent or where located within 100 feet of a creek. Hand clearing or use of equipment with rubber tires is preferred. Other types of equipment may be used only if authorized by the Fire Marshal, Development Services Department, and Regional Water Quality Control Board pursuant to an approved erosion control plan.
3. All required fuel-reduction work shall be completed by the Project Applicant prior to issuance of a building permit. Ongoing maintenance of the fire-fuel management zones shall be the responsibility of either the landscape maintenance district or the homeowners' association.

MM 5.2-3b: Building construction which abuts the open vegetation areas, open space easements or dedications, including accessory buildings, shall meet the following minimum construction requirements:

1. All homes shall be provided with residential sprinkler systems.
2. Roof material on all buildings shall be of a Class "A" rating. For roof coverings where the profile allows a space between the roof covering and sheathing, the space at the eaves end must be fire-stopped to keep out flames or embers (i.e. arch-tile roofs).
3. Wood fences, excluding posts shall be prohibited adjacent to open space areas. A fence may be provided but it must be of a noncombustible material. Additionally, the first ten feet perpendicular from the noncombustible fencing adjacent to open space shall also be noncombustible.
4. Any projections for the structure, including but not limited to, balconies and patio covers shall be enclosed on the sides and/or undersides with materials approved for one-hour, fire-resistive construction on the exterior side, to prevent heat or exterior fires from being trapped underneath the projection.
5. Materials for balconies, patio covers and decks must be construction of noncombustible material as approved by the Fire Marshal.
6. Structures constructed in such a manner that they are suspended on piers or pilings over hillsides, shall be of noncombustible construction, fire-retardant-treated wood or heavy timber, or enclosed on the sides with materials approved for one-hour, fire-resistive construction on the exterior side in such a manner as to prevent the underside of the structure from being subject to heat or flame from the hillside below.
7. Venting shall not be located on the downhill side of the structure when the California Building Code venting regulations can be met without installation of downhill venting. When attic and underfloor vents are necessary on the buildings, they shall be louvered and screened with 1/4- inch metal mesh screen to prevent entry of sparks or burning ember. Turbine attic vents shall be equipped to allow one-way direction only; they shall not free-spin in both directions.



8. Siding shall be of a noncombustible material and the eaves shall be protected with material approved for one-hour, fire-resistive construction on the exterior side.
9. Exterior windows, window walls, glazed doors, and glazed opening with exterior doors shall be insulated glass units with a minimum of one tempered pane, either in or out, or glass blocks or have a fire-resistive rating of not less than 20 minutes or other assemblies as approved by the City of Redding Building Division and Fire Department. Glazing frames made of vinyl materials shall have a welded corner and metal reinforced in the interlock area and display ANSI/AAMA/NWWD.
10. Skylights shall be tempered glass or dual-pane.
11. Gutters shall be constructed with noncombustible material and include measures to prevent the collection of leaves and debris in the gutter.
12. Prior to any vertical construction, a 20-foot-wide all-weather-surface road shall be constructed and remain serviceable to all developing lots and fire hydrants shall be installed with adequate fire flows available for fire-suppression purposes.

MM 5.2-3c: Prior to occupancy of residential lots, vegetation clearance around structures shall meet the minimum requirement of the RMC Title 9 §9.20.160 and *General Plan* Policy HS4E. The following disclosure statement shall be provided as part of the transfer of property title:

- The owner acknowledges that said property is located within a very high wildland-fire hazard zone.
- The owner acknowledges the provisions of RMC Title 9 §9.20.160 requiring proper maintenance of firebreaks around occupied structures, including all required structure maintenance requirements.

MM 5.2-3d: Throughout the duration of on-site construction activities, the following tasks shall be performed:

1. A 30-foot fuel modification zone, from the curb line, shall be provided along both sides of all roads and driveways or functional equivalent.
2. All flammable vegetation and fuels caused by site development shall be legally disposed of or removed prior to fire season.
3. Project Applicant shall prepare a fire protection plan that will provide temporary emergency access and fuel modification zones for phased development during construction.
4. Any grass or other vegetation planted along cut/fill areas (i.e., roadways for erosion control purposes) shall be low growing (less than 18 inches in height) and approved by the Fire Marshal.



8.3 AESTHETICS, LIGHT & GLARE

Light and Glare Impacts

MM 5.3-5: The City shall ensure that a photometric plan for exterior park lighting does not spill over the property line. All exterior light fixtures at the park shall be shielded or directed away from adjoining uses to prevent light spill and glare, pursuant to all applicable lighting standards and requirements of the RMC.

Cumulative Impacts

Refer to MM 5.3-5.

8.4 TRAFFIC AND CIRCULATION

Year 2015 Plus Project Traffic Operations

MM 5.4-2a: Eureka Way (SR-299)/Sunset Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 23rd residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Eureka Way (SR-299)/Sunset Drive intersection.

MM 5.4-2b: Buenaventura Boulevard/Lakeside Drive. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 24th residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Buenaventura Boulevard/Lakeside Drive intersection.

MM 5.4-2c: Court Street/11th Street. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 86th residential unit, the Project Applicant shall construct a traffic signal and necessary appurtenant improvements at the Court Street/11th Street intersection.

MM 5.4-2d: Placer Street/Airpark Drive/Fig Avenue. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 266th residential unit, the following improvements shall be made at the Placer Street/Airpark Drive/Fig Avenue intersection:

- Re-stripe westbound Placer Street to include one left-turn lane, one through lane, and one shared through/right-turn lane.
- Widen eastbound Placer Street to include one left-turn lane, two through lanes, and one exclusive right-turn lane.
- Modify the existing traffic signal as necessary to accommodate these improvements.



Cumulative Conditions (Year 2030)

MM 5.4-6a: Eureka Way (SR-299)/Road B. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 259th residential unit, the Project Applicant shall construct one of the following alternatives to accommodate traffic movements at the Eureka Way (SR-299)/Road B intersection:

- A traffic signal and necessary appurtenant improvements, or
- Improvements to restrict movements to right-in/right-out and left-in only.

MM 5.4-6b: Eureka Way (SR-299)/Lower Springs Road. Prior to recordation of a final map or issuance of a building permit for apartments which cumulatively would allow the 295th residential unit, the Project Applicant shall construct the following improvements at the Eureka Way (SR-299)/Lower Springs Road intersection:

- A traffic signal, widening of the eastbound approach to add a dedicated left-turn lane and necessary appurtenant improvements, or
- If the Eureka Way (SR-299)/Road B intersection is improved to restrict movements to right-in/right-out and left-in only, the southbound approach (Road A) shall be widened to accommodate 1 left-turn lane, 1 shared left-turn/through lane, and 1 right-turn lane; eastbound Eureka Way (SR-299) shall be widened to accommodate 2 receiving lanes from the left-turn lanes exiting the Project; and the second receiving lane shall be tapered and terminated approximately 1,620 feet of the intersection.

MM 5.4-6c: Eureka Way (SR-299)/Buenaventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartment units which cumulatively would allow the 377th residential unit, the Project Applicant shall improve Eureka Way (SR-299)/Buenaventura Boulevard intersection by widening the southbound approach to include an exclusive left-turn lane, a shared through/left-turn lane and an exclusive right-turn lane. The existing traffic signal shall be modified as necessary to accommodate these improvements.

MM 5.4-6d: Placer Street/Buenaventura Boulevard. Prior to recordation of a final map or issuance of a building permit for apartments which would cumulatively allow the 377th residential unit, the Project Applicant shall pay the pro-rata cost share representing 18 percent of the cost of improvements to Buenaventura Boulevard at its intersection with Placer Street as identified in the Project *Traffic Impact Analysis Report* (Omni-Means, June 2009). The fee shall be established based on an engineer's cost estimate of the improvements prepared by the Project Applicant and approved by the City Engineer. Alternatively, should the subject Buenaventura Boulevard improvements be added to the Citywide Traffic Improvement Fee (TIF) program, from that point forward payment of the TIF in accordance with the Redding Municipal Code will be deemed sufficient mitigation.



8.5 NOISE

Off-Site Mobile Source Impacts

MM 5.5-2: In accordance with RMC §17.38.100, the proposed Project shall construct a minimum six-foot high perimeter block wall beginning at the site's western limits along Eureka Way (SR-299) extending easterly along the site's boundary to lot 37. At lot 37 the perimeter block wall shall extend along the rear residential property lines (lots 37 through 44) to Road A and shall have a return along Road A of approximately 30 feet. The perimeter block wall must block the line of sight at ground level from the dwelling units facing Eureka Way (SR-299). Acceptable materials for the construction of the barrier shall have a density of 3.5 pounds per square foot of surface area and be constructed of masonry materials. The exterior finish of the wall shall be determined in consultation with the City's Development Services Department. The final configuration and height of the barrier shall be confirmed by a qualified acoustical professional prior to the issuance of occupancy permit, in consultation with the City's Development Services Department.

8.6 AIR QUALITY

Short-Term Impacts (Construction)

MM 5.6-1a: The proposed developer and all successors in interest shall include in all construction contracts the requirement that the following construction dust mitigation measures be implemented during all phases of construction:

- Apply nontoxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas inactive for ten days or more).
- Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
- All grading operations of a project shall be suspended when wind (as instantaneous gusts) exceeds 20 miles per hour as directed by the Air Quality Management District.
- Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person).
- Schedule construction activities that affect traffic flow to off-peak hours.
- Water active construction sites at least twice daily.
- All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. (This provision is also enforced by local law enforcement agencies).



- Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).
- Install wheel washers where vehicles enter and exit unpaved roads only paved roads, or wash off trucks and any equipment leaving the site each trip.
- Cleared vegetation shall be treated by legal means other than open burning, such as chipping, shredding, or grinding.

MM 5.6-1b: The Project Applicant shall provide a plan for approval by the Shasta County Air Quality Management District and the City demonstrating that heavy-duty (>50 horsepower) off-road construction vehicles, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average reduction of 20 percent for NO_x and a 45 percent reduction of particulates compared to the most recent California Air Resources Board fleet average at time of construction.

MM 5.6-1c: The Project Applicant shall include in all construction contracts the requirement that the following temporary construction mitigation measures be implemented during all phases of construction:

- The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.
- Equipment operators will be instructed to minimize equipment idling time to 10 minutes.
- Utilize existing power sources (e.g., power poles) to clean fuel generators rather than temporary power generators wherever possible.

8.7 BIOLOGICAL RESOURCES

Special-Status Fish Species Habitat

MM 5.7-1a: Prior to issuance of a City grading permit effecting any jurisdictional waters as identified in the Project wetland delineation, the developer shall file a pre-construction notification with the Corps and secure any necessary Corps permit resulting from said consultation. As determined necessary by the Corps, formal consultation with NMFS may be initiated under Section 7 of the ESA. If NMFS concurs that the proposed Project will not affect listed salmonid species, no further measures are required with regards to protection against direct "take". If NMFS will not concur with a "no effect" or "not likely to adversely effect" determination, the following measures shall be implemented:

1. No activities shall occur within 100 feet of Gold Run Creek until Incidental Take authorization has been obtained from NMFS.
2. To the maximum extent practicable, in-channel construction shall be restricted to the dry season as stipulated by the lead regulatory agency (i.e., NMFS, CDFG) when stream flows have subsided and Steelhead and salmon are not present.



3. Additional measures to avoid direct impacts, beyond restriction of instream activities in Gold Run Creek, may include, but not be limited to, the following:
 - Retain a qualified biologist to conduct a pre-construction survey to determine if Steelhead or salmon are present in or within the vicinity of any proposed in-stream activity. If none are present, construction shall proceed pursuant to any conditions required by NMFS and/or CDFG in accordance with the FESA and CESA.

For any features determined to not be subject to Corps jurisdiction during the verification process, authorization to discharge (or a waiver from regulation) shall be obtained from the RWQCB. For fill requiring a Corps permit, a Section 401 water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Loss of wetlands and/or jurisdictional waters shall be compensated at a minimum 1:1 ratio or at a rate determined by the lead regulatory agency. This can be accomplished through purchase of appropriate credits at an approved mitigation bank, appropriate payment into an approved in-lieu fee fund, or on-site or off-site creation, monitoring, and maintenance (as approved by the Corps, NMFS, CDFG, and RWQCB).

MM 5.7-1b: Implement MM 5.11-1b in Section 5.11, HYDROLOGY AND WATER QUALITY.

Special-Status Birds, Raptor Species, and Migratory Birds

MM 5.7-1c: Prior to grading permit issuance or vegetation disturbance (between April 1st and July 31st), in areas where suitable nesting habitat exists for raptors, yellow warbler, yellow-breasted chat, and other migratory birds, a qualified biologist shall complete a bird nest search (pre-construction survey) of all suitable habitats to support a nest, and of the fields where there is a potential for ground nesting. The survey should be conducted no more than 30 days from the onset of construction. If an active nest is found within 500 feet of a construction area, the Project Applicant shall consult with a qualified biologist to determine appropriate measures to avoid disturbance of the nest(s) during any activities with the potential to disturb active nest(s) (i.e. a no-impact buffer delineated around the nest while the nest is active). Measures to be taken shall be reviewed by the CDFG and the City of Redding prior to initiation of any activities with the potential to disturb active nest(s).

Special- Status / Rare Plant Species

MM 5.7-1d: Prior to the initiation of on-site grading and throughout the duration of Project construction activities a 100-foot buffer surrounding the elderberry shrubs shall be established. The buffer shall be fenced with temporary fencing and flagging in accordance with the USFWS protocol.

MM 5.7-1e: Prior to the initiation of on-site grading, a special-status plant survey shall be conducted on-site by a qualified botanist during the appropriate survey period for the following special status plant species: pink creamsacs (*Castilleja rubicundula ssp. rubicundula*) between April and June; northern clarkia (*Clarkia borealis ssp. borealis*) between June and September. In the event that special status plant species are identified, a relocation/transplantation program



shall be established and approved by the CDFG prior to commencement of construction activities.

Northwestern Pond Turtle

MM 5.7-1f: Within 48 hours prior to any disturbance within suitable habitat for northwestern pond turtle, proposed disturbance areas shall be surveyed for the presence of this species by a qualified biologist. Surveys of the area shall be repeated if a lapse in construction activity of two weeks or greater occurs. If the species is detected, individuals shall be relocated to a suitable site within the same drainage by a qualified biologist. If the species was detected during the pre-construction survey, a monitoring biologist will be onsite during initiation of construction activities to ensure that no turtles are present during the onset of disturbance activities. If a northwestern pond turtle is encountered during construction, activities shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any trapped, injured, or killed northwestern pond turtles shall be reported immediately to the CDFG.

California Red-Legged Frog and Foothill Yellow-Legged Frog

MM 5.7-1g: Two weeks prior to any disturbance within suitable habitat for the California red-legged frog and Foothill yellow-legged frog, proposed disturbance areas shall be surveyed for adults frogs, tadpoles, or eggs by a qualified biologist. If either species is detected, the biologist shall contact the USFWS (for the California red-legged frog) and CDFG (for the Foothill yellow-legged frog) to determine if moving any of the life stages is appropriate. In making this determination, the USFWS and CDFG would consider if an appropriate relocation site exists. If the USFWS and/or CDFG approves moving the animals, the biologist shall be allowed sufficient time to move the animals from the work site before work activities begin.

Fire Fuel Reduction Plan

MM 5.7-1h: Project grading and/or clearing plan shall incorporate the following to ensure the protection of sensitive species and/or habitats as a result of implementation of the Fire Fuels Reduction Plan.

1. Selective removal within 50 feet from the riparian edge or 100 feet from top of bank of Salt Creek and Gold Run Creek, whichever is greater, for fire protection, all vegetation trimming and removal shall be performed by using hand tools to prevent additional damage to riparian vegetation and soil compaction from the use of heavy equipment or vehicles. All slash materials (limbs, branches and other woody debris) resulting from trimming and removal activities should be removed from the buffer area by hand and properly disposed at an appropriate off-site location or retained for on-site erosion control in an appropriate manner.
2. Selective removal within 25 feet of the flow line of other jurisdictional features tributary to Salt Creek and Gold Run Creek shall be performed by hand.
3. Implement MM 5.7-1d and MM 5.7-1e.



Jurisdictional Waters and Riparian Habitat

MM 5.7-2: Implement MM 5.7-1a.

Cumulative Impacts

Refer to MM 5.7-1 through MM 5.7-2.

8.8 CULTURAL RESOURCES

Historic / Prehistoric Resources

MM 5.8-1a: Should any previously unevaluated cultural resources (i.e., burnt animal bone, midden soils, Projectile points or other humanly-modified lithics, historic artifacts, etc.) be encountered, all earth-disturbing work shall cease within 50 feet of the find until a qualified archaeologist can make an assessment of the discovery and recommend/implement mitigation measures as necessary. This stipulation does not apply to those cultural resources evaluated and determined not Historical Resources/Historic Properties.

MM 5.8-1b: If human remains are discovered during development of the proposed Project, all activity shall cease immediately, the Contractor shall notify the Shasta County Coroner's Office immediately under state law, and a qualified archaeologist and Native American monitor shall be contacted. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission shall be contacted pursuant to Public Resources Code §5097.98.

8.9 PUBLIC SERVICES AND UTILITIES

Fire Protection

Refer to MM 5.2-3a through MM 5.2-3d in Section 5.2, PUBLIC HEALTH AND SAFETY.

Fire Flow Capacity / Storage

MM 5.9-7: Prior to issuance of building permits for any of the two-story apartments within the Project, one of the following two facilities shall be in place and operational to meet City and California Fire Code fire flow requirements to the satisfaction of the City Engineer:

- An on-site pressure booster pump meeting the design specifications of the City. Funding for maintenance of the booster pump station shall be provided through creation of a utility maintenance district encompassing the Project.
- A new 750,000 gallon storage reservoir in the Hill 900 pressure zone through City administration of the City's 2000 *Water Master Plan* and Capital Improvement Program.



Sewer Services

MM 5.9-9a: During the course of phased Project development, off-site improvements to the City wastewater collection system shall be made in accordance with the City's 2003 *Wastewater Utility Master Plan* and Capital Improvement Program, generally as follows:

- Phase 1 - Upsize "Jenny Creek" line downstream of manholes K3-11 and K3-15.
- Phase 2 - Upsize "Trinity Street" line downstream of manholes J6-41, J6-28, and J6-32.
- Phase 3 - Construct Phase II, Parts 1 and 2, of the Westside Interceptor.

MM 5.9-9b: Wastewater collection improvements shall be constructed in accordance with City standards and the specifications of the City Engineer. Funding for maintenance of the private sewer pump stations shall be provided through creation of a utility maintenance district encompassing the Project.

Cumulative Impacts

Refer to mitigation measures listed above.

8.10 GEOLOGIC RESOURCES

Soil Stability

MM 5.10-1a: In conjunction with project improvement plans, the Project Applicant shall submit a final grading plan and erosion- and sediment-control plan prepared by a licensed engineer to the City Engineer pursuant to RMC, Chapter 16.12, *Clearing, Grading, Fills and Excavations*. As required by the Code, the submittal shall include a soils report prepared by a qualified professional. The grading plan shall incorporate the measures addressing soil stability, landslides, and mine adits identified in the *Preliminary Soils Report* (August 2008), prepared by SHN Consulting Engineers and Geologists and any additional measures recommended by the final soils report.

MM 5.10-1b: The control measures for cuts, fills, drainage, and erosion shall be designed and constructed per the final soils report and Standard Specifications for Public Works Construction (Green Book), latest edition, City Construction Standards, and the California Building Code.

Landslides

MM 5.10-4: Subsurface exploration shall be performed by a licensed geotechnical engineer prior to making final geotechnical design recommendations. The final geotechnical design recommendations shall confirm or expand upon the following preliminary recommendations to the satisfaction of the City Engineer:

- All cut and fill slopes shall be designed and graded to be no steeper than two horizontal to one vertical (2H:1V).



- The overall stability of the proposed grading shall be evaluated at critical cross sections as determined by a geotechnical engineer. The design parameters for the soil shall be determined based on subsurface exploration at the proposed retaining wall locations, and material testing of the fill materials.

Mine Adits / Tunnels

MM 5.10-7a: The strike and dip of the mine tunnel at Adit J1 (Jefferson Mine) shall be verified through subsurface exploration during on-site geotechnical investigations required by MM 5.10-4. Recommendations to appropriately close Adit J1 shall be implemented prior to commencement of grading activities.

MM 5.10-7b: Prior to recordation of the Final Subdivision Map, the Project Applicant shall retain a qualified geotechnical engineer to certify that all on site open mine entrances and other mine features have been properly closed to prevent entry. All mine features shall be properly filled and compacted to prevent any physical hazard to person or property. Should additional adits be discovered during site clearing, a qualified geologist shall be contacted to evaluate the site conditions surrounding the adit, and provide additional evaluations of risk of adverse effects to the proposed Project.

8.11 HYDROLOGY AND WATER QUALITY

Short-Term Impacts (Construction)

MM 5.11-1a: The Project Applicant shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and secure a Construction Activity Storm Water Permit from the Regional Water Quality Control Board (RWQCB).

MM 5.11-1b: Prior to the beginning of any clearing, grading, or site improvement activities, with the exception of fire fuel management activities, improvement plans for grading, drainage, utilities, and other required improvements shall be approved by the Engineering Department and other concerned City of Redding departments. These plans shall be in conformance with the SWPPP and RMC Title 16.12. Prior to the issuance of a clearing and/or grading permit, an Interim Erosion and Sediment Control Plan shall be included that establishes specific measures and Best Management Practices (BMPs) tailored to the Project to maximize the reduction of pollutant loading in stormwater runoff and shall be implemented to the maximum extent practicable. Grading shall be restricted to the period from April 15th to October 1st of any year unless a waiver is granted by the City Engineer.

Water Quality Impacts

MM 5.11-2: All storm drain facilities shall be designed to be consistent in design and intent with the City of Redding Construction Standards, the City of Redding Storm Water Quality Improvement Plan, and the City of Redding Phase II NPDES Permit from the California Regional Water Quality Control Board. Project design shall incorporate strategies to minimize the polluting of storm water both during construction and long-term.



Cumulative Impacts

Refer to MM 5.11-1 through 5.11-2.



SECTION 9.0: Level of Significance After Mitigation



9.0 INVENTORY OF SIGNIFICANCE AFTER MITIGATION

9.1 LAND USE AND RELEVANT PLANNING

No significant impacts for land use and relevant planning have been identified.

9.2 PUBLIC HEALTH AND SAFETY

No significant impacts related to public health and safety have been identified following compliance with federal, state, and local regulations, in addition to recommended mitigation.

9.3 AESTHETICS, LIGHT AND GLARE

No unavoidable significant impacts related to aesthetics, light and glare have been identified following implementation of recommended mitigation measures, and compliance with the City's *General Plan* and the Redding *Municipal Code (RMC)*.

9.4 TRAFFIC AND CIRCULATION

Following implementation of the mitigation measures (i.e., recommended improvements), the traffic and circulation impacts would be reduced to a less than significant level.

9.5 NOISE

No unavoidable significant impacts related to noise have been identified following implementation of recommended mitigation measures, and compliance with the City's *General Plan* and the RMC.

9.6 AIR QUALITY

The proposed Project would include mitigation measures to reduce short-term construction emissions due to fugitive dust during grading and construction as well as vehicular emissions associated with equipment use during construction to a less than significant level. Long-term (operational) air quality impacts would be reduced to less than significant levels. The Project's incremental contribution to air quality and global climate change would be less than significant with proposed mitigation measures.

9.7 BIOLOGICAL RESOURCES

No unavoidable significant impacts to biological resources have been identified following compliance with the regulatory framework, City policies and regulations, and recommended mitigation.



9.8 CULTURAL RESOURCES

No unavoidable significant impacts related to cultural resources have been identified following implementation of the recommended mitigation measures and compliance with City, state, and/or federal requirements.

9.9 PUBLIC SERVICES AND UTILITIES

All impacts associated with public services and utilities for the proposed Project would be considered less than significant with adherence to and compliance with all applicable goals, policies and implementation measures set forth by the City of Redding, in addition to recommended mitigation.

9.10 GEOLOGIC RESOURCES

All geologic and seismic impacts associated with implementation of the proposed Project would be considered less than significant with adherence to and compliance with all applicable goals, policies, and implementation measures set forth by the City of Redding and the California Building Code.

9.11 HYDROLOGY AND WATER QUALITY

No unavoidable significant impacts to water quality have been identified following compliance with the regulatory framework, City policies and regulations, and recommended mitigation.



SECTION 10.0: Effects Found Not to be Significant





10.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

The City of Redding conducted an Initial Study in September 2008 to determine significant effects of the proposed Project. In the course of this evaluation, certain impacts of the proposed Project were found to be less than significant due to the inability of a Project of this scope to create such impacts or the absence of Project characteristics producing effects of this type. The effects determined not to be significant are not required to be included in primary analysis sections of the Draft EIR. In accordance with State *CEQA Guidelines* §15128, the following section provides a brief description of potential impacts identified both in the Draft EIR and the Initial Study, found to be less than significant. A copy of the Initial Study is found in Appendix 15.1, INITIAL STUDY / NOTICE OF PREPARATION.

LAND USE AND PLANNING. *Would the project:*

a. *Physically divide an established community?*

No Impact. The proposed Project is designed in the City of Redding *General Plan* for "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", and "Greenway" (GWY). Land uses adjacent to the proposed Project site include undeveloped land and the City of Redding's Sacramento River Trail to the north; single-family residential development and undeveloped land to the east; residential units, Old Millhouse Deli, the City of Redding Electric Substation, and Eureka Way (SR-299) to the south; and residential units and undeveloped land to the west. In addition, Salt Creek is a natural barrier along the western and northern boundaries of the proposed Project and Gold Run Creek forms the eastern Project boundary. The proposed Project and its location do not have the potential to physically divide an established community. No impact has been identified.

b. *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

Less Than Significant Impact. Under the City's *Zoning Ordinance*, the proposed Project site is zoned "RM-9" (Residential Multiple Family), "RS-2" (Residential Single Family), "GO" (General Office), and "OS" (Open Space), and is designated "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", and "Greenway" (GWY) in the City of Redding *General Plan*. The proposed subdivision will require a rezone to apply the "PD" (Planned Development Overlay District) to the property. The "PD" (Planned Development Overlay District) will allow the Project to have the proposed variety of housing types, blending of *General Plan* densities, and flexibility in application of the City's zoning regulations.

The existing subdivision located to the east of the proposed Project is comparable in size, and shares the same *General Plan* designation as the proposed Project ("Residential, 2 to 3.5 units per acre" and zoning designation of "RS-2"). No significant impact has been identified.

c. *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Impact. There are no habitat conservation plans or natural community conservation plans that are applicable to the proposed Project site. The Project is consistent with the goals stated in the Natural Resources Element of the City of Redding *General Plan*. No impact has been identified.



POPULATION AND HOUSING. *Would the project:*

- 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)?*

Less Than Significant Impact. The Project proposes the construction of approximately 440 residential units. This would occur on a site that is currently vacant. Based on the 2000 Census, the estimated population that would reside on the proposed Project site at buildout would be approximately 1,069 persons (440 households x 2.43 persons per household = 1,069 persons). The proposed Project would not induce unplanned population growth not anticipated by the *General Plan*; therefore, impacts are less than significant.

- b. *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. The proposed Project would create opportunity for the construction of approximately 440 residential units, designed with a mix of housing types include single-family, multi-family, cluster homes with motor courts, and custom homes sites, as planned and anticipated by the City of Redding *General Plan*. The proposed Project is similar in character to that in surrounding residential subdivisions to the east. The proposed Project would not induce unplanned population growth not anticipated by the *General Plan*. The proposed Project would not displace people or any existing housing. No impact has been identified.

- c. *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. Refer to population and housing response b), above.

GEOLOGY AND SOILS. *Would the Project:*

- b. *Result in substantial soil erosion or the loss of topsoil?*

Less Than Significant Impact. According to the Shasta County Area California Soil Survey (NRCS 2006), the proposed Project site contains five soil units: Auburn loam, 0 to 8 percent slopes (AnB), Auburn very stony clay loam, 30 to 50 percent slopes, eroded (AtE2), Auburn very rocky clay loam, 50 to 70 percent slopes, eroded (AUF2), Goulding very stony loam, 10 to 30 percent slopes (GdD), Goulding very rocky loam, 30 to 50 percent slopes (GeE2), Newton gravelly loam, 8 to 15 percent slopes (NeC), and Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes (RcB). Red Bluff gravelly loam comprises the majority of the soil on the proposed Project site. The Red Bluff gravelly loam soils is moderately well drained soil that occurs on hills and terraces. Permeability is moderately slow and surface runoff is slow to medium. Goulding very rocky loam (GeE2) is found along the northern portion of the proposed Project and consists of excessively drained soil that occurs on mountains. This soil has moderate permeability and surface runoff is medium to very rapid.

Preliminary plans indicate that site grading will be limited to areas outside Salt Creek and Gold Run Creek and associated riparian areas. According to the proposed site plan, there are no existing or proposed structures within 200 feet of either Salt Creek or Gold Run Creek. Approximately 145.5 acres will result in the grading (cut and fill) in order to facilitate street construction, provide utilities, and create building pads for the proposed Project. The proposed modification to the surface terrain is typical to subdivision development and, based on the site soils, is not expected to alter the susceptibility of the land to unstable



earth conditions or erosion. Standard grading-control measures are applicable to the proposed Project as City ordinances and other government agency regulations will be applied. This City of Redding *Grading Ordinance* requires the application of "Best Management Practices" (BMPs) in accordance with the City Erosion and Sediment Control Standards Design Manual (RMC §16.12.060, Subsections C, D, E). In practice, specific erosion-control measures are determined upon review of the final subdivision grading plan and are tailored to Project-specific grading impacts. This will ensure that potential grading impacts are less than significant. Due to City of Redding policy regarding grading on slopes in excess of 20 percent this type of activity is severely restricted.

- e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No Impact. The proposed Project does not involve the use of septic tanks or alternative wastewater disposal. No impact has been identified.

HYDROLOGY AND WATER QUALITY. *Would the project:*

- 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 (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Less Than Significant Impact. The proposed Project would utilize City of Redding water service for domestic uses and fire protection; therefore, groundwater supplies would not be impacted. There are no known wells on or near the proposed Project that could be impacted by construction. Compliance with the City of Redding *General Plan* policies will preserve and protect the quantity and quality of groundwater resources as a result of new development. These policies include NR3A, B, and E, which recommend: (1) maintaining the natural condition of waterways and floodplains to the extent feasible, (2) maintaining given flood-control requirements; (3) complying with the State Regional Water Quality Control Board's regulations and standards to maintain and improve groundwater quality; and (4) working with appropriate State, Federal, and local agencies to protect, improve, and enhance groundwater quality in the region. Impacts are less than significant in this regard.

- 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?*

Less Than Significant Impact. Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area. The proposed Project is located on two FEMA Flood Insurance Rate Maps (Panel ID: 0603602580E and 0603602585E), and is in the 'X' zone for each panel. These areas have been identified in the FEMA community flood insurance study as areas of moderate or minimal hazard from the principal source of flood in the area. Additionally, according to the City of Redding *Master Storm Water Plan* and the *General Plan*, the proposed Project site is not located in a FEMA 100 year flood plain. Less than significant impacts are anticipated in this regard and no homes are proposed to be located within or near a flood zone.



h. *Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?*

Less Than Significant Impact. Refer to geology and soils response (g), above.

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?*

Less Than Significant Impact. Two major dams are located in the general vicinity of the proposed Project: the Shasta Dam and Whiskeytown Dam. The anticipated inundation resulting from the unlikely failure of these dams has been documented in the City of Redding *General Plan*. According to this documentation, the proposed Project would not be affected by the unlikely failure of either of these dams. Additionally, there are no levees near the proposed Project.

j. *Inundation by seiche, tsunami, or mudflow?*

No Impact. The threat of a tsunami wave is not applicable to inland, central valley communities such as Redding. Seiches could potentially be generated in either Shasta or Whiskeytown Lakes during an earthquake. However, neither lake has been identified in the Health and Safety Element of the *General Plan* as having any risk to the City under such circumstances. In addition, there is no documented threat of mudflows affecting the proposed Project site. No impact has been identified.

AIR QUALITY. *Would the project:*

e. *Create objectionable odors affecting a substantial number of people?*

No Impact. The proposed Project consists of residential development, and does not involve land use that could generate objectionable odors affecting a substantial number of people. No impact has been identified.

TRANSPORTATION/CIRCULATION: *Would the project:*

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?*

No Impact. The proposed Project site is located outside the Approach Zones for both the Redding Municipal Airport and Benton Airpark; therefore, there is no potential to interfere with Airport operations.

e. *Result in inadequate emergency access?*

Less Than Significant Impact. City of Redding *General Plan* Health and Safety Policies HS4J and HS4I generally require that residential neighborhoods having 50 or more dwelling units have at least two points of public-street access, and that cul-de-sac or dead-end street lengths not exceed 600 feet. In accordance with this policy, two points of public street access will be provided at the time when the project exceeds 49 dwelling units. A primary access for the proposed Project is on Eureka Way (SR-299), and is located at the intersection of Eureka Way (SR-299) and Lower Springs Road. For consistency with the Health and Safety



Element of the *General Plan*, a second proposed Project access location will be provided by a new street located approximately 2,375 feet east of the Eureka Way (SR-299)/Lower Springs Road intersection. This internal road (labeled Road B on the proposed site plan) will provide connectivity from this access location to the proposed Project. A third proposed access location will be provided from the future extension of Buenaventura Boulevard, and will predominately serve the eastern portion of the proposed Project via an internal road (labeled Road O on the proposed site plan). This impact is considered less than significant.

f. *Result in inadequate parking capacity?*

No Impact. All homes within the subdivision will be required to provide a minimum of two on-site covered parking spaces in accordance with the City's Parking Ordinance (RMC Chapter 18.62). No impact is anticipated.

g. *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?*

Less Than Significant Impact. The proposed Project will not conflict with adopted policies, plans, or programs supporting alternative transportation. Although bus routes do not currently serve the proposed Project, the Redding Area Bus Authority (RABA) currently operates one route within two miles of the proposed Project. Route 2 runs north along portions of Eureka Way, with a bus stop on Buenaventura Boulevard (west side) at Eureka Way (SR-299). According to the *Redding Parks, Trails, and Bikeways Map*, Eureka Way (SR-299) is identified as a Caltrans Bikeway. An existing multi-purpose trail is located north of the proposed Project, along the Sacramento River, and a proposed multi-purpose trail is located to the east of the Project. Redding *General Plan* Policy T6B requires new neighborhoods to provide pedestrian-dedicated facilities and Policy T9E requires new development to provide bicycle facilities or pay in-lieu fees.

BIOLOGICAL RESOURCES. *Would the project:*

e. *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact. The *General Plan* has a number of policies regarding the protection of natural resources and habitats. These policies address the reservation of habitat for fish and wildlife, creek corridors, vernal pools, riparian areas, wetlands migratory corridors, and open space preservation. In addition, the City has adopted a *Tree Management Ordinance* (RMC Chapter 18.45) that promotes the conservation of mature, healthy trees in the design of new development. The ordinance recognizes that the preservation of trees will sometimes conflict with normal land development consideration. Section 18.45.070(D) encourages the set-aside of natural areas to further tree preservation as proposed by the proposed Project and preservation of any unique or extraordinary tree specimens. All provisions of Chapter 18.45 of the RMC pertaining to the preservation of trees within subdivision developments shall be complied with. This is a less than significant impact.



- f. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

There are no Habitat Conservation Plans or Natural Community Conservation Plans adopted in this area. No impact has been identified.

MINERAL RESOURCES. *Would the project:*

- a. *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

No Impact. A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the State Division of Mines and Geology as being a resource of regional significance and is intended to help maintain any quarrying operations and protect them from encroachment of incompatible uses. The proposed Project is not identified in the City of Redding *General Plan* as having any known mineral resource value, or as being located within any "Critical Mineral Resource Overlay" area. No impact has been identified.

- b. *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?*

No Impact. Refer to mineral resources response a), above.

HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*

- a. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

No Impact. The nature of the proposed Project as a single- and multi-family subdivision does not present a significant risk related to hazardous materials or emissions. Some amount of hazardous materials may be used for regular maintenance and cleaning of homes, but these materials are not considered a significant risk to health and safety. According to the Phase I Environmental Site Assessment that was prepared for the proposed Project, there are no documented hazardous material sites located on or near the proposed Project and the site is not included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. Therefore, impacts to the public or environment are not anticipated.

Hazardous substances typically used for construction would be transported and used on-site. Grading and construction activities would require the transport, storage, use and/or disposal of hazardous materials such as fuels and grease for the fueling/servicing of construction equipment. The use, handling, and storage of any hazardous materials during construction would be in compliance with the appropriate federal, state and local safety standards, and therefore does not represent a significant threat to the public or environment.

- 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?*



No Impact. Refer to hazards and hazardous materials response a), above.

- c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

No Impact. Refer to hazards and hazardous materials response a), above.

- 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 it create a significant hazard to the public or the environment?*

No Impact. Refer to hazards and hazardous materials response a), above.

- 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, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. The proposed Project is located outside the established approach/departure clear zones for Redding Municipal Airport. The proposed Project's residential land uses would not conflict with operations of the Airport or present a safety hazard to people residing in the subdivision. There are no private airstrips in the proposed Project's vicinity.

- f. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. Refer to hazards and hazardous materials response a), above.

- g. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. The proposed Project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area. This is a less than significant impact.

NOISE. *Would the project result in:*

- b. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant Impact. Groundborne vibrations are usually associated with heavy vehicle traffic (including railroad traffic), and with heavy equipment operations. Vehicle traffic generated by the proposed Project would be mostly passenger car in character, with some light and medium trucks. This is not expected to generate significant vibrations.

- d. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*



Less Than Significant Impact. During the construction of subdivision improvements, there will be a temporary increase in noise in the project vicinity above existing ambient noise levels. The most noticeable construction noise would be related to grading, utility excavation, and land-clearing activity. The City's Grading Ordinance (RMC Chapter 16.12.120.H) limits grading-permit-authorized activities to between the hours of 7 a.m. and 7 p.m., Monday through Saturday. No operations are allowed on Sunday. Since the heavy construction work associated with the proposed Project is limited in scope and by existing regulation, the anticipated noise impact to neighboring residents is less than significant.

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, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The development is not within an airport influence area, nor are there private airstrips in the vicinity of the proposed Project site. No impact as been identified.

f. *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. Refer to noise response f), above.

PUBLIC SERVICES. *Would the project:*

a. *Would the project 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:*

(4) *Parks?*

Less Than Significant Impact. The City of Redding *General Plan* Goal R4 states: "Provide a minimum of ten acres of improved parkland per 1,000 population...". This Goal is implemented through a variety of programs. Based on the City's *Subdivision Ordinance*, the Project's parkland obligation is 5.36 acres. With approximately 440 proposed units at 2.43 person per household, the proposed Project would generate approximately 1,069 persons, or a requirement of 10.07 acres based on the 10 acre per thousand people standard. The proposed Project includes 13.9 acres of parkland and is therefore exceeding the *Subdivision Ordinance* and also furthering the larger goal of 10 acres of parkland per 1,000 population. This impact is considered less than significant.

AESTHETICS. *Would the project:*

a. *Have a substantial adverse effect on a scenic vista?*

Less Than Significant Impact. Scenic vistas are defined as expansive views of highly-valued landscapes from publicly accessible viewpoints. Scenic vistas include views of natural features such as topography,



water courses, outcrops, and natural vegetation, as well as man-made scenic structures. At the landscape level, the on-site topography consists of incised canyons that slope to the northeast towards the Sacramento River. Habitats occurring within and adjacent to the proposed Project include annual grassland, mixed chaparral, blue oak woodland, open water, riparian wetland, and seasonal wetland. The only current land use within the proposed Project site are electric utility corridors, with several utility maintenance roads crossing the proposed Project site.

Historic land uses in the Project vicinity consisted primarily of gold mining activities, in addition to utility and transportation development. As a result of historic mining activities on-site and in the vicinity, ridge tops, hillsides, stream terraces, and stream beds have been widely altered, and the Project area's biological habitat was adversely affected by fumes associated with the Keswick and other copper smelters in the area during the 1890s to early 1900s.

Land uses adjacent to the proposed Project site include undeveloped land and the City of Redding's Sacramento River Trail to the north; single-family residential development and undeveloped land to the east; residential units, Old Millhouse Deli, the City of Redding Electric Substation, and Eureka Way (SR-299) to the south; and residential units and undeveloped land to the west. The proposed Project is located within an area designated in the City of Redding *General Plan* as "Residential, 6 to 10 units per acre", "Residential, 2 to 3.5 units per acre", "GO" (General Office), and "Greenway" (GWY). The *General Plan* land use designations for surrounding properties include "GWY", "Residential, 2 to 3.5 units per acre", "Residential, 1 to 5 units per acre", and "Public Facility" (PF-I).

The proposed Project is consistent with the City's *General Plan* adopted land use designation for the site and proposes to retain approximately 142.8 of the 272.9 acres as undeveloped land. There are no scenic vistas identified in the City of Redding *General Plan* and no existing significant topographical features of high scenic value within the Project site. Therefore, the proposed project would not have a significant impact on a scenic vista.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. Eureka Way (SR-299) forms the southern boundary of the proposed Project. According to Caltrans' California Scenic Highway Program, Eureka Way (SR-299) is an eligible State Scenic Highway, although not officially designated at this time. Areas to the east of the proposed Project along Eureka Way (SR-299) have been developed with similar residential use. As previously mentioned above, the Project site is partially disturbed and does not contain visually significant resources. Project implementation would not result in significant visual impacts along the subject portion of Eureka Way (SR-299).

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. Refer to aesthetics response a), above.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?



Less Than Significant Impact. The proposed residential development has the potential to create new sources of substantial light or glare, which could affect day or nighttime views in the area; however, the City of Redding has lighting standards (§18.40.090 of the *Zoning Ordinance*) which were designed to prevent light spillage and glare. Compliance with the regulation will reduce this impact to a less than significant level.

CULTURAL RESOURCES. *Would the project:*

c. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less Than Significant Impact. No paleontological resources or unique geologic features have been identified on the proposed Project site, and the potential for their occurrence is considered minimal. Impacts are considered less than significant.

d. *Disturb any human remains, including those interred outside of formal cemeteries?*

Less Than Significant Impact. There are no known burial sites on the proposed Project site. If human remains are unearthed during future development of the site, the provisions of California Health and Safety Code §7050.5 shall apply. Under this Section, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition, pursuant to California Public Resources Code §5097.98. Impacts are considered less than significant.

RECREATION. *Would the project:*

a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Less Than Significant Impact. Chapter 17.42 of the City's *Subdivision Ordinance, Park and Recreational Land Dedications and In-Lieu Fees*, requires that as a condition of approval of a tentative map, a subdivider shall either dedicate land or pay a fee in lieu thereof for park or recreational purposes. In accordance with State subdivision law, only projects containing 50 or more lots may be required to dedicate land for park development. Additional recreational development fees are collected by the City at the time of issuance of a building permit on an individual lot. The proposed site plan shows an approximate 13.9 acre neighborhood park within the proposed development, along with approximately 142.8 acres of open space. In addition, the Project proposes a Development Agreement between the Project Applicant and the City for developer construction of the proposed public park in conjunction with the subdivision in exchange for credits towards the Project's city-wide park development impact fee obligation. The Project also proposes an on-site connection to the Buenaventura Trail at the proposed Buenaventura Boulevard extension. With the proposed park acreage and trail connections, there would not be any potentially significant impacts to recreation associated with the proposed Project.

b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Less Than Significant Impact. Refer to recreation response a), above.



AGRICULTURAL RESOURCES. *Would the project:*

a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the California Resources Agency, to non-agricultural use?*

No Impact. The proposed Project is not designated as prime farmland in the City of Redding *General Plan*, Natural Resources Element. The proposed Project site has not been historically used for agricultural purposes, is not governed by the Williamson Act, nor does it possess soils that are prime for agricultural production. The proposed Project is within the primary growth area of the City and is zoned for the requested uses. No impact has been identified.

b. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. Refer to agricultural resources response a), above.

c. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?*

No Impact. Refer to agricultural resources response a), above.



SECTION 11.0: Organizations and Persons Consulted



11.0 ORGANIZATIONS AND PERSONS CONSULTED

LEAD AGENCY

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SECTION 13.0: Mitigation Monitoring Program



13.0 MITIGATION AND MONITORING PROGRAM

Section 2.0, EXECUTIVE SUMMARY, of this Environmental Impact Report (EIR) identifies the mitigation measures that would be implemented to reduce the impacts associated with the proposed Salt Creek Heights Subdivision project. *The California Environmental Quality Act (CEQA)* was amended in 1989 to add §21081.6 to the Public Resources Code:

“ . . . the public agency shall adopt a reporting or 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.”

This §21081.6 requires a public agency to adopt a monitoring and reporting program for assessing and ensuring compliance with any required mitigation measures applied to proposed development. Section 21081.6 provides general guidelines for implementing mitigation monitoring programs, and mandates that the specific reporting and/or monitoring requirements that are to be enforced during project implementation be defined prior to final certification of the Final EIR.

Section 13.0, MITIGATION AND MONITORING PROGRAM, will be provided as part of the Final EIR.



SECTION 14.0: Comments and Responses



14.0 RESPONSE TO COMMENTS

Chapter 14.0 will be provided under separate cover as Final EIR Volume III, RESPONSE TO COMMENTS.



SECTION 15.0: Appendices





15.0 TECHNICAL APPENDIX

The following Technical Appendix for the Salt Creek Heights Environmental Impact Report is provided in electronic format on compact disc at the front of this document and in hard copy format (Volume II.A and II.B) at the City of Redding Development Services Department, located at 777 Cypress Avenue, Redding, California 96001 and the City of Redding Public Library located at 1100 Parkview Avenue, Redding, California 96001 (530-245-7250):

- 15.1 Initial Study/Notice of Preparation
- 15.2 Hazardous Material Evaluation
- 15.3 Traffic Impact Analysis
- 15.4 Noise Data
- 15.5 Air Quality Data
- 15.6 Biological Resources Assessments
- 15.7 Cultural Resources Survey
- 15.8 Preliminary Soils Report
- 15.9 Preliminary Storm Drain Analysis
- 15.10 SB-610 Water Supply Assessment
- 15.11 Correspondence (NOP Responses / Public Services and Utilities Responses)

Volume I - DRAFT EIR and Volume II (A and B) - TECHNICAL APPENDIX are also available online for review and/or download at the City of Redding's website located at: www.ci.redding.ca.us/devserv/envdocs/EnvDocsmstr.html.



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